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BULL TROUT STATUS REVIEW AND ASSESSMENT IN THE STATE OF IDAHO

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ABSTRACT

Broad-scale declines in bull trout *Salvelinus confluentus* distribution and abundance over the past century or more led to statewide no-harvest regulations in the state of Idaho in 1994, and ultimately to a threatened listing under the Endangered Species Act in 1998. Despite this listing, quantitative evaluations of trends in abundance and estimates of existing population sizes over most of its historical range have not been made. We evaluated long-term trends in bull trout abundance, estimated population sizes, and conducted population viability analysis (PVA) for bull trout in Idaho. We used stratified sampling extrapolations of fish surveys (snorkel and electrofishing) conducted at 2,521 study sites scattered across 77,447 km of stream within seven recovery units in Idaho. Bull trout were present in 887 (35%) of the study sites and were most likely to be observed or captured in 1st and 2nd order streams. Long-term trends from bull trout redd counts, spawning weirs, and snorkel and electrofishing population surveys indicate that many bull trout populations declined through the mid-1990s, but in general have increased over the last 10 years. Moreover, abundance of all other salmonid species appeared to increase at the same time. We estimated there was approximately 1.13 million bull trout divided between 262 designated local populations within the seven recovery units. Persistence probabilities for bull trout in 11 core areas throughout four recovery units ranged from 0.22 to >0.95 with several >0.80. When conservative estimates of the instantaneous rate of population change (μ) and the variance in rate of change (σ^2) were used at the recovery unit scale, and risks of recovery unit-wide bull trout extirpation due to environmental stochasticity were spread over the number of local populations for each recovery unit identified in the bull trout draft recovery plan, PVA results indicated extirpation risks for bull trout in five of the seven recovery units included in our analysis was low. Conclusions pertaining to the other two recovery units (Kootenai River and Coeur d'Alene River) based on PVA results are limited due to the lack of quantitative sampling data from those areas and the lack of identification of local populations in the Coeur d'Alene River Recovery Unit in the bull trout draft recovery plan. Our results suggest that bull trout remain widely distributed and abundant in large stream networks throughout Idaho, and that their abundance in general has been increasing for most areas over the past decade.

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INTRODUCTION

Like most other native salmonids in the western United States, the bull trout has experienced, over the past century or more, substantial declines in abundance and distribution in large portions of its historical range (Rieman and McIntyre 1993; Rieman et al. 1997). Declines have been ascribed to a number of factors, but most notably to 1) displacement by or hybridization with nonnative trout, 2) overexploitation by anglers, and 3) habitat alterations and fragmentation due to water storage and diversion, grazing, mineral extraction, and timber harvest. Such declines led the Idaho Department of Fish and Game (IDFG) to implement statewide no-harvest regulations in 1994, and ultimately led to a threatened listing under the ESA for bull trout in the Columbia River Basin (USFWS 1998).

Several status assessments have been conducted for bull trout throughout most of their range in the coterminous United States (Ratliff and Howell 1992; Rieman and McIntyre 1993; Rieman et al. 1997). Most assessments have been qualitative in nature, focusing on the proportion of assumed historical range that is no longer occupied. None have included broad-scale evaluation of long-term and recent trends in abundance and estimates of current population sizes at a variety of scales, such as individual local populations or entire, large river drainages. Such information is important because both the total number of bull trout and their trend in abundance are central to assessing current status. Our primary objective was to fill this information gap for Idaho populations.

Population viability analysis (PVA) has become a useful tool for evaluating status of populations at levels below carrying capacity. Essentially, PVA is a modeling exercise used to estimate future population sizes and risk of extinction based on population vulnerability to four categories of stochastic factors—genetic, demographic, environmental, and interactions between local populations (Shaffer 1981; Gilpin and Soulé 1986; Soulé 1987). Most methodologies for PVA are deterministic in nature and are based on population simulations where a model is constructed using a number of population parameters. Consequently, PVA, in general, is data hungry (Beissinger and Westphal 1998). Although PVA approaches based on population simulation and metapopulation dynamics can be useful for prioritizing “at risk” populations or determining how different management strategies may affect populations, sufficient data are usually unavailable to adequately perform such analyses, especially for rare or listed species (Dennis et al. 1991; Ralls et al. 2002). Furthermore, predicted extinction risk, particularly for longer time frames (i.e. 100 years), is sensitive to the estimated growth rate (Dennis et al. 1991; Ludwig 1999; Fieberg and Ellner 2000), allowing small inaccuracies in parameter estimation to have a large effect on the model predictions.

An alternative to complicated PVA models requiring numerous population parameters is the stochastic exponential growth model of Dennis et al. (1991), which estimates growth rates and extinction probabilities based on time series data. This simple PVA model permits estimation of population persistence over a representative range of likely population growth rates and variances in order to assess the relative extirpation risks faced by bull trout in Idaho. Model inputs simply include a set of time series data from which the model estimates the instantaneous rate of population change (μ) and the variance in that rate of change (σ^2). Once estimates for μ and σ^2 are in hand, probabilities of persistence for a population can be calculated using different values for the threshold of extinction level, initial population size, and α. While all input parameters influence the probability of persistence for the population, μ and σ^2 are the most influential, and σ^2 has more pull than μ (Schill et al. 2005). We are aware of only one formal PVA evaluation of extinction risk for bull trout (Rieman and McIntyre 1993) following

the modeling approach of Dennis et al. (1991). Because their evaluation is more than a decade old, our second objective was to re-evaluate the risk of extirpation of bull trout in Idaho with new population abundance data and updated trend information.

OBJECTIVES

1) Evaluate long-term (since 1985) and recent (since 1994) trends in abundance

2) Estimating current population sizes at a variety of scales

3) Perform PVA with available data

STUDY AREA

The rangewide distribution of bull trout remains unclear because of its confusion in the past with Dolly Varden and Arctic char (Behnke 2002). In Idaho, bull trout were historically present in most of the Columbia River and Snake River basins up to Shoshone Falls, and possibly in the Little Lost River drainage above Shoshone Falls, possibly due to a headwater capture event from the Salmon River basin (Figure 1; Table 1). To facilitate summary of available information, and for consistency in terminology used by the USFWS in the draft bull trout recovery plan (USFWS 2000), we subdivided bull trout distribution in Idaho into 31 core areas (Figure 2) within seven recovery units (Figures 1 and 2). There are portions of three other recovery units in Idaho (Imnaha-Snake rivers, Hells Canyon Complex, and Northeast Washington) as well as portions of the Jarbidge River distinct population segment (DPS), but we did not include these units in our analyses due to lack of data and actual occupied habitat in Idaho. Bull trout trend and abundance data were unavailable or unreliable because of wide confidence intervals for lakes (e.g., Priest Lake, Lake Pend Oreille, Arrowrock Reservoir, etc.), so we excluded them from our analyses as well.

Because the historical range of bull trout is unknown and unknowable at small scales (i.e. individual streams), we chose to focus on current distribution, abundance, trends, and population viability and not on the amount of presumed historical habitat currently occupied. Within Idaho, all life history patterns are represented, including fluvial, adfluvial, and resident forms, but our surveys did not attempt to distinguish between these types of life histories.

METHODS

We gathered georeferenced, quantitative bull trout abundance data from a number of sources, including IDFG, U.S. Forest Service (USFS), U.S. Bureau of Land Management (BLM), and U.S. Bureau of Reclamation (BOR). The data included annual redd counts, fixed weir counts, stream snorkel surveys, and one- and multiple-pass electrofishing surveys. We divided our analyses into long-term population trends, approximations of abundance, and population viability analysis.

Population trends

Long-term trends in bull trout abundance were available from redd counts, weirs, electrofishing, and snorkel count data within five of the seven recovery units in Idaho. For this analysis, we only included data sets if data were available for all years between 1994 and 2003, which we defined as recent trend. We felt this was an appropriate period from which to assess data because regulations changed in 1994 for most bull trout waters prohibiting harvest. Although data from the Little Lost River Recovery Unit did not meet this requirement, we included them in the analysis because these were the best available data for the recovery unit. Trend data from 10 additional sites with two to seven years of data were obtained but not included in our analysis of trend because of short or incomplete time frames (Appendix A). Redd count trends were available in five core areas within four recovery units (Table 2; Appendix A). Redd counts were summarized as total annual counts from one to six individual trend sites. Weir trends were available for three core areas in two recovery units and were summarized simply as the total annual upstream spawning run. In the Little Lost River Recovery Unit, the only available trend data was from four electrofishing sites that were repeatedly (but sporadically) sampled from the 1980s to present; trend for this recovery unit was assessed using the yearly average density of bull trout from these sites.

Since 1985, daytime snorkel counts have been conducted by IDFG personnel via several Bonneville Power Administration-funded research projects as part of what has been termed General Parr Monitoring (GPM). Although originally designed to track trends for anadromous species, observations on all resident fish have been recorded as well. Petrosky and Holubetz (1986) provide a more detailed description of snorkel techniques and sampling designs. All GPM sampling occurred in the Salmon River and Clearwater River recovery units only, and sufficient long-term snorkel data were available for calculating trend in 10 core areas, with average annual counts used as the dependent variable.

Because of the wealth of snorkel data available for trend analysis, and in order to obtain adequate temporal data dispersion within consistently monitored sites, we included only those snorkel sites where multiple data points were available for each decade from the 1980s to 2000s to examine trend prior to and after the no-harvest regulation changes of 1994 (n = 367). These data for bull trout appear in Appendix B. For the snorkel sites, it was also possible to compare the abundance of bull trout to that for other salmonids, including brook trout *S. fontinalis*, westslope cutthroat trout *Oncorhynchus clarkii lewisi*, Chinook salmon *O. tshawytscha*, and steelhead trout *O. mykiss*. These data are listed in Appendix C. For the weir and redd count data, records were more limited, and we used all available data.

We examined trend before (when possible) and after bull trout no-harvest regulation changes were made in Idaho in 1994. We used linear regression with sample year as the independent variable and $\log_e$-transformations of the redd counts, weir, and snorkel and electrofishing abundance data as the dependent variable to analyze post-1994 trends in abundance. The $\log_e$-transformations allowed us to linearize the regression model and caused the slopes of the lines to be equivalent to the intrinsic rates of change, r, for each population (Maxell 1999), which were then tested for positive slopes (i.e. one-tailed t-tests of the regression coefficients) to see if bull trout were stable or increasing across Idaho since 1994. Following the advice of Maxell (1999) and Peterman (1990), we used $\alpha = 0.10$ in order to increase the power of detecting true trends which we expected to be near 0.8. Because zero values are incompatible with $\log_e$-transformations, and no bull trout were counted during snorkeling in the Lemhi River core area in 1995 (4 sites) and the Upper Salmon River in 1999 (12 sites), we

inserted values of 0.01 bull trout per 100 meters for these years to calculate post-1994 *r* for these two core areas. These insertions decreased the standard error for these two data sets <1% and changed slope <0.1% for the untransformed trend data.

Approximation of abundance

To approximate bull trout abundance statewide, within each recovery unit, and within core areas where possible, we first coded (with the ArcView® geographic information system, ArcGIS) a standard 1:100,000 hydrography layer for bull trout presence using three categories: present, absent, or unknown. This was done with workshops held across the state, where numerous state, federal, tribal, and private fish biologists used local knowledge and professional judgment to label all stream segments according to bull trout presence. This methodology followed the protocol that Shepard et al. (2005) used for status assessment for westslope cutthroat trout. These designations were made to stratify our analyses into these separate categories and consequently reduce error in our approximations of bull trout abundance, but were not meant to be unconditionally correct.

We overlaid the stream hydrography layer with all georeferenced bull trout abundance data we could gather within the recovery units (not at the workshops, but through later individual contacts), regardless of whether bull trout were present. We considered all snorkeling and electrofishing abundance data we could gather from 1997 to 2004 as useful in approximating current bull trout abundance, but the bulk (88%) of the data was collected from 1999 to 2003. For snorkel (n = 1,255) and one-pass electrofishing (n = 887) study sites, the total number of bull trout observed or captured was conservatively used as minimal abundance estimates. For multipass electrofishing study sites (n = 383), we estimated abundance using the maximum-likelihood method calculated with the MicroFish software package (Van Deventer and Platts 1989).

Because no differentiation was made for daytime snorkel counts, one-pass electrofishing capture data, or multipass depletion estimates, our abundance estimates should be viewed, according to previous studies of fish abundance estimation techniques, as gross underestimates. Indeed, Thurow and Schill (1996) and Mullner et al. (1998) estimated that daytime snorkeling accounted for only 77 and 65%, respectively, of the abundance of depletion estimates. Similarly, Kruse et al. (1998) found that one-pass electrofishing accounted for 81% of depletion estimates. Moreover, Peterson et al. (2004) estimated that even depletion electrofishing for bull trout underestimated true abundance by an average of 116%. Thus, we realize that our bull trout abundance estimates are most likely very conservative, but we used them as a starting point for extinction risk analysis.

We excluded fry from our analyses because of the inefficiencies in capturing them (Peterson and Cederholm 1984; Reynolds 1996). However, because data were gathered from several sources and collected in a variety of manners, we could not standardize fish size in our estimates of abundance. Subsequently, the percentage of study sites that included bull trout >70, >75, or >100 mm (total length, TL) in the abundance estimates were 19, 6, and 75%, respectively. Most (97%) of the data we gathered were collected during low to moderate flow conditions (i.e. between June and September, after spring runoff and before the onset of winter), which helped to standardize efficiencies in snorkel counts and in electrofishing capture.

On a statewide basis and for each recovery unit and core area, we summed the total length of stream by stream order (see Strahler 1964) in ArcGIS. We standardized our estimates

of abundance to the number of bull trout per 100 meters of stream (study sites averaged 96 m in length), calculated a mean abundance within each stream order, and multiplied that by the number of 100 meter reaches, to calculate total abundance of bull trout by stream order. We then summed the bull trout abundance estimate for each stream order to obtain an overall abundance estimate. We used the stratified random sampling formulas from Scheaffer et al. (1996) to calculate population totals.

Our intentions were to produce separate estimates for each of the three stream categories (bull trout present, absent, or unknown), but only 7% of the total stream km were in the unknown category, and only 2% of the study sites were located on stream segments belonging to the unknown category. Consequently, we lumped the unknown study sites and stream segments together with the absent study sites and stream segments for estimation purposes. We assumed that the data we were able to collect were somewhat randomly distributed, or at least behaved as if they were random, and that by making this assumption we did not inject any directional bias (negative or positive) in our results.

Core areas as defined by the USFWS are analogous to metapopulations since they contain one or more local populations, or groups of bull trout that spawn within a particular stream or portion of a stream system (Lohr et al. 2000). We did not attempt to define populations. Rather, we used the local populations identified by the USFWS in the draft bull trout recovery plan (USFWS 2000). To approximate the number of bull trout in local populations, we divided the estimate of bull trout abundance in a particular core area by the number of local bull trout populations designated within that core area in the USFWS draft recovery plan.

Population viability analysis

Population viability analyses were performed using the stochastic exponential growth model of Dennis et al. (1991) to model population sizes and extinction risks due to stochastic environmental factors. The model incorporates environmental stochasticity by using time series data. Assuming the sampling variability around the estimates is constant, the remaining variability in the time series data is presumed to be due to environmental factors, and the growth model can be fitted to the data. Analyses were performed using the computer software STOCHMVP (E. O. Garton, Department of Fish and Wildlife Resources, University of Idaho). We first analyzed data at the smaller scale of core areas, but time series data from only 11 core areas contained a full compliment of recent trend data (i.e. from 1994 through 2003). For these core areas, estimated persistence probabilities were based on observed values for the instantaneous rate of population change (μ) and the variance in rate of change (σ^2). For the remaining 16 core areas where observed model parameters (μ and σ^2) were not available, they were instead selected to fit three scenarios: 1) modest population growth and low variance; 2) equilibrium population (i.e. no growth) and modest variance; and 3) modest population decline and high variance (Schill et al. 2005). Values for μ and σ^2 appropriate for these three scenarios were selected based on the range of values observed for the 11 core areas mentioned above. The validity of selected values of μ and σ^2 was further substantiated by the fact that they were similar to those previously observed for bull trout in portions of Idaho and Montana at a local population spatial scale (Rieman and McIntyre 1993). Estimated total abundances obtained from the extrapolations explained above were used as the initial population sizes when available. When specific abundance estimates for a particular core area were unavailable, we divided the recovery unit abundance estimate by the number of core areas within the recovery unit and used this for the initial population size. The model was run based on 95% probability of survival for 100 years. The lower thresholds for extinction were arbitrarily set

at 10 and 100 individuals to represent elevated extinction risks due to demographic stochasticity and quasi-extinction, respectively (Quinn and Hastings 1987; Rieman and McIntyre 1993).

The modeling process was equivalent at the larger recovery unit scale, again using values for μ and σ^2 for the three scenarios described above. Four recovery units had observed values of μ and σ^2. When multiple core areas with observed values of μ and σ^2 were available for a recovery unit, the average of these values was used in the model.

The modeling approach of Dennis et al. (1991) assumes local populations act independently, but most of the large, relatively pristine drainages within the recovery units are known to harbor numerous local bull trout populations within a metapopulation structure (e.g., Bjornn and Mallet 1964; Dunham and Rieman 1999). Murphy et al. (1990) argues that when conducting PVAs for species in fragmented habitats such as bull trout, efforts should focus on environmental stochasticity and metapopulations. The modeling approach of Dennis et al. (1991) does not incorporate metapopulation theory. We attempted to assess the relative risk of all bull trout local populations going extinct within a recovery unit by using the formula $1 - (P_1.P_2.. \ . \ . \ P_i)$, where P_i is the probability of falling below the extinction threshold (i.e. 100 bull trout within the next 100 years) in each of the *i* local populations (Rieman and McIntyre 1993; Schill et al. 2005). We again used the three sets of μ and σ^2 values to fit the scenarios of population change and variance as described above (Schill et al. 2005), except this time, they were graphically displayed. We created a figure where each pair of μ and σ^2 values were represented separately by a line describing the number of populations needed to assure survival of at least 100 bull trout in one of the recovery units populations over a 100 year time frame given different levels of initial bull trout abundance (assumed to be equal for each of the *n* populations in each recovery unit). We then assigned a point within the figure for each recovery unit according to the number of designated local populations according to the recovery plan (USFWS 2000) and the number of bull trout we estimated to occur in each recovery unit. Our method of assessing bull trout extirpation risk across the whole recovery unit assumed no refounding events would occur and that sizes of the various local populations are not temporally correlated. We checked for synchrony among available trend data by calculating Pearson correlations among all pairwise combinations (Isaak et al. 2003).

RESULTS

The current assessment of bull trout, covering a total of 77,447 km of stream throughout the seven recovery units in Idaho, was based on 2,521 surveys of bull trout abundance (Table 1). This included 1,565 surveys by IDFG, plus additional data obtained from the USFS (607 study sites), BLM (59 sites), and BOR (56 sites) (Figure 1). Raw bull trout abundance data for all study sites appears in Appendix D. Study sites occurred in stream reaches that were 18% 1st order, 32% 2nd order, 23% 3rd order, 14% 4th order, 10% 5th order, and 2% 6th order. The sample length of all study sites combined totaled 220 km of stream, or 0.3% of the entire stream network within the bull trout recovery units in Idaho. At the workshops held across Idaho, state, federal, tribal, and private fisheries professionals determined that bull trout occurred in 14,551 km of stream (19%) within the recovery units.

Bull trout were captured in 887 (35%) of the study sites, including 834 (46%) of 1,831 study sites within the “bull trout present” stream segments (Table 1). Of the 690 study sites within the “bull trout absent” stream segments, bull trout were captured at 53 (8%) sites. Two of 45 sites within the unknown stream segments contained bull trout. Bull trout were most likely to

occur at study sites in 3rd order (present in 40% of sites) and 2nd order (40%) streams, and least likely to occur at study sites in streams 5th order and higher (<20%).

Population trends

The trend data indicate that, in general, bull trout abundance appeared to decline through the mid-1990s (9 of 14 available trends), but has been at least stable and usually increasing across most of their range in Idaho over the last 10 years (Table 2, Figures 3 and 4). Intrinsic rate of growth (*r*) since 1994 was positive for 14 of 18 estimates, and 90% CIs did not overlap zero for five of the positive estimates (Table 2). For the four negative trend estimates, each 90% CI overlapped zero. Population trend since 1994 was consistently positive in the Salmon River (7 of 9 estimates) and Clearwater River (5 of 5 estimates) recovery units in particular, whereas in the remaining three recovery units for which trend data were available, population trend was positive in two of four estimates (Table 2).

Although increasing trends in bull trout abundance over the past decade appeared to coincide with the implementation in 1994 of the Idaho statewide no-harvest regulations for bull trout, we found that for the long-term snorkel data in the Salmon River and Clearwater River recovery units (i.e. the GPM data set), abundance of all other species of salmonid increased at the same time (Figure 5). Estimates of *r* for the GPM data set was 0.11 for bull trout and ranged from 0.07 to 0.20 for all other salmonids; no confidence intervals included zero, indicating that growth values for all species of salmonid were statistically positive. Bull trout abundance was positively correlated with abundance for all other salmonids, but was most strongly correlated with westslope cutthroat trout (Table 3). There were no negative correlations in abundance between any two species of salmonid.

Approximation of abundance

We estimated there was approximately 1.13 million bull trout >70 mm in Idaho (Table 4; Table 5). Sixty-six percent (0.75 million bull trout) of the bull trout abundance estimate was designated to occur within the stream segments categorized as containing bull trout. The remaining 34% (0.38 million) was estimated to occur in stream segments classified in the unknown and bull trout absent categories. Of these 0.38 million bull trout, 79% were estimated to occur in 1st order streams.

Over one-half (0.64 million) of the overall number of bull trout were estimated to occur in the Salmon River Recovery Unit, followed by the Southwest Idaho Recovery Unit (0.14 million). Estimates could not be made for the Coeur d'Alene River Recovery Unit, and estimates for two other recovery units (Kootenai River and Clark Fork River) were based on data with low study site sample size. Considering that the bull trout recovery unit teams designated 269 local populations within the seven recovery units, we estimated that an average local population contained about 4,200 bull trout, ranging from a low of 1,031 in the Clearwater River Recovery Unit to a high of 5,093 in the Salmon River Recovery Unit. Study site sample size and dispersion throughout stream orders was adequate in only eight core areas where we could subsequently estimate abundance.

Nearly all (95%) of the overall abundance of bull trout occurred in 1st through 3rd order streams (Figure 6). First order streams comprised 46% of the total stream kilometers and 57% of the abundance, but only 19% of the study site surveys (Figure 6). Mean linear bull trout

density (>100 mm TL) at all study sites was highest in the Clark Fork River (22.1/100 m) and Little Lost River (18.4/100 m) recovery units, and lowest in the Clearwater River (1.2/100 m), Southwest Idaho (2.7/100 m), and Salmon River (4.4/100 m) recovery units (Figure 7). Average recovery unit density was 10.3 bull trout/100 m, whereas the average density among all 2,525 study sites combined was 3.6 bull trout/100 m.

Population viability analysis

When treated as single independent groups at the *core area* scale, probabilities of persistence for bull trout in the 11 core areas where we could estimate instantaneous rates of population change and variances ranged from 0.22 in the Little–Lower Salmon River to >0.95 in multiple core areas (Table 6). Several of the persistence probabilities were >0.80 for the 11 core areas, including 6 out of 11 and 4 out of 11 for PVAs with 10 and 100 bull trout as the lower threshold, respectively (Table 6). Probabilities of persistence for bull trout in the other 16 core areas when using assumed values of μ and σ^2 to fit three scenarios of population change and variance ranged from 0.09 to >0.95 when treated as single, completely independent populations at these spatial scales (Table 7).

When bull trout were treated as single independent groups at the *recovery unit* scale, probabilities of persistence ranged from 0.17 to >0.95 when using assumed values of μ and σ^2 to fit three scenarios of population change and variance (Table 8). When estimated values for μ and σ^2 were used, probabilities of persistence ranged from 0.55 to >0.95 (Table 8). At both the recovery unit and core area scale, probabilities of persistence were similar for each scenario, despite differences in initial population abundances of up to several orders of magnitude.

When attempting to assess relative risk of extirpation for recovery units with multiple local populations, persistence probabilities for local populations of varying initial sizes were multiplied. Model parameters were not estimated, but were selected based on previously estimated values to fit three scenarios that likely encompass the range for bull trout populations in Idaho. Results indicate that the conservative estimate for maximum number of local populations needed to ensure 95% probability of survival of at least one local population ranged from seven to 33 depending on initial population size (Figure 8). Five of Idaho's seven recovery units fit into this conservative area of the graph (see discussion). The Kootenai River and Coeur d'Alene River recovery units were two exceptions, requiring modest population growth and low variance conditions for probabilities of persistence to exceed 0.95 for at least one local population (Figure 8). When all available statewide trend data sets were checked for temporal synchrony, 15% of the pairwise-comparisons for data sets from 1994 to 2003 had r^2 values >0.50, and 23% of the data sets from 1985 to 1993 had r^2 values >0.50 (Table 9). Synchrony did not appear to strongly affect our analysis, because we expected correlations of data sets within recovery units to be stronger than those from outside the unit. Correlations between data sets within the Salmon River and Clearwater River recovery units, the two units with the most data sets, had pairwise-comparison r^2 values >0.50 for only 14 and 17% of the comparisons, respectively.

DISCUSSION

Our results indicate that bull trout distribution remains widespread, bull trout remain abundant, populations are stable or increasing across much of their range in Idaho, and their risk to extirpation in most of the recovery units in Idaho appears to be low. We estimated that

well over 1 million bull trout age-1 and older reside within seven recovery units, and this was likely a substantial underestimate of overall abundance (see below). The relative strength of bull trout populations in Idaho relative to other areas (Rieman et al. 1997; Thurow et al. 1997) is not surprising given the large expanses of protected wilderness areas and other federal lands supporting bull trout habitat in Idaho. With 85% of the species on the Endangered Species Act list in peril because of loss of habitat (Wilcove et al. 1998), the large amount of protected habitat in Idaho lends some credibility to the species viability. When considering that Idaho likely contains at least 1 million bull trout, and that Idaho constitutes only a portion of the current range for the species, we believe that the risk to rangewide extinction has previously been overestimated.

Our statewide estimates corresponded reasonably well with the summation of individual recovery unit estimates where available. The four recovery units (Little Lost River, Southwest Idaho, Salmon River, and Clearwater River) where we had the most abundance data, and where we were most confident in our approximation of bull trout abundance, totaled 0.9 million bull trout, or 73% of the total. We do not know how abundant other salmonids are within these recovery units, but our data suggest that other species of salmonids may be increasing over the past decade as well. While the timing of the beginning of this increasing trend coincides with a statewide ban of bull trout harvest, decreased angler mortality for bull trout may not be the major contributing factor. It is likely that more favorable climate conditions, increased returns of anadromous fish, or some combination of these or other factors that have influence over large geographical areas are driving this trend. A better understanding of the proportion of total salmonid abundance that bull trout comprise would better clarify their status relative to other native and nonnative salmonid co-inhabitants, some of which may affect bull trout persistence.

While the objectives of this document were not oriented towards assessing risks to bull trout populations posed by brook trout, we briefly address the topic here as brook trout impact both the abundance and viability of bull trout populations through competition and hybridization (Spruell et al. 2001; USFWS 2000). Most bull trout x brook trout hybrids are F_1, or first generation (Leary et al. 1993; Kanda et al. 2002). However, Kanda et al. (2002) observed backcrosses of hybrids to both bull and brook trout as well as second-generation hybrids, but these post-F_1 fish represented only 37% of the hybrids observed. There appears to be some mechanism preventing hybrid swarms from developing between these two species (Leary et al. 1993; Kanda et al. 2002). Perhaps of more significance are the relative population costs of hybridization. Brook trout mature at a much earlier age than bull trout (Behnke 2002), and combined with the tendency of brook trout to form dense populations (Wydoski and Whitney 1979), brook trout obtain a numerical advantage. Most of the hybrids observed by Kanda et al. (2002) were produced by bull trout females, suggesting that bull trout wasted greater reproductive effort on hybridization than brook trout. While it appears that brook trout hybridizing with bull trout may not drastically affect the genetic viability of healthy bull trout populations through the formation of hybrid swarms, instances of complete displacement of bull trout populations by brook trout have been documented (Dambacher et al. 1992). Brook trout potentially pose a significant risk to the viability of bull trout populations because 44% of the 252 areas supporting bull trout local populations also support brook trout (Table 10).

There are a number of obvious limitations with the data used to approximate bull trout abundance, which may have biased our abundance estimates. First, there is much uncertainty regarding the upper range limit of bull trout in each stream, but our methodology often assumed they were distributed to the uppermost end of perennial streamflow (i.e. the biologists at the workshops did not always attempt to pinpoint the exact upper range for each individual stream). If the distribution of our abundance data points and the actual distribution of bull trout were

unequally balanced or biased in these upper reaches of 1st order streams (i.e. if we extrapolated average bull trout abundance to stream segments upstream of the actual uppermost distribution of bull trout), we may have severely overestimated bull trout abundance estimates in 1st order stream segments. Since 57% of the overall bull trout abundance was accounted for in 1st order streams, such an overestimation would have positively biased our overall bull trout abundance estimate. For that matter, estimates for other stream orders may have been equally biased if the distribution of the data points and the actual distribution of bull trout distribution were incongruent, although that likelihood was lower for higher order stream segments and in recovery units with abundant data.

Second, GPM data, which was originally established to monitor anadromous salmonid populations, contain a disproportionately high number of density estimates for larger-order (3rd order and higher) river sites, but most of the bull trout abundance we estimated to occur in 1st through 3rd order (but primarily 1st order) streams. Such discontinuity between study site sample size and actual abundance may have weakened the precision of our estimates, but it is unlikely that they biased them directionally. Third, our extrapolation methodology assumed that, within each recovery unit (and core areas where estimates were made), actual abundance was reflected accurately in the sample sites we obtained. However, if our sample sites did not reflect true abundance across the extrapolated stream segments, our estimates may have been biased positively or negatively. Fourth, we extrapolated bull trout abundances based on stream km calculated from 1:100,000 scale maps. It is likely that bull trout inhabit streams found on 1:24,000 scale maps, not found at the larger scale, which would negatively bias our population estimates. Probably the biggest limitation was the use of snorkel and depletion (mostly one-pass) electrofishing to estimate bull trout abundance, methods which drastically underestimate true abundance (Thurow and Schill 1996; Mullner et al. 1998; Kruse et al. 1998; Peterson et al. 2004). Furthermore, we did not include age-0 bull trout, which ostensibly removes a large portion of overall bull trout abundance.

We had little or no control over most of these limitations, and taken together they greatly reduced the precision and reliability of our abundance estimates. However, our goal was not to precisely estimate bull trout abundance throughout Idaho, but rather to generate a starting point for PVA analysis. Considering all potential sources of bias, we believe that bull trout abundance was underestimated for most core areas and recovery units. Nevertheless, we felt they served as an adequate foundation for PVA modeling of extirpation risk.

Bull trout trend was commonly negative prior to 1994, but since then it appears that bull trout have been increasing in abundance across much of their range in Idaho, especially in the Salmon River and Clearwater River recovery units. Unfortunately, there were very little trend data for the Southwest Idaho, Kootenai River, Little Lost River and Coeur d'Alene River recovery units. The post-1994 increasing trend appeared to coincide with the implementation of statewide no-harvest regulations for bull trout. However, the fact that all other fish increased at the same time suggests that the regulation changes were not responsible for the increased abundance. That evidence of increasing abundance was strongest in the two recovery units with anadromous salmonids, and that Chinook salmon and steelhead trout also increased during this time period, suggests a possible link between increased anadromous productivity in these recovery units and positive bull trout population growth. Further analysis will be needed before drawing such conclusions.

In general, PVA analysis for Idaho bull trout populations suggests that they currently have a low risk of extirpation in Idaho. However, discussion of PVA results should be prefaced by stating that model predictions should be viewed cautiously and treated as testable

hypotheses (Reed et al. 2002; Shaffer et al. 2002; Ralls et al. 2002), since in essence there is no way to accurately predict events in the future. Although PVA usefulness is limited by a great amount of uncertainty surrounding both parameter estimation and interpretation, the benefits generally outweigh the limitations (Lindenmayer et al. 1993; Brook et al. 2000; Coulson et al. 2001), but PVA results should be only one of the factors considered when making a management decision (Ralls et al. 2002).

Despite favorable reviews of the usefulness and precision of PVAs in the management of endangered and threatened species when using 10 years of data (Brook et al. 2000; McCarthy et al. 2003) such as we did, we attempted to be conservative where possible when estimating probabilities of persistence. This was accomplished by using high thresholds of extinction and by using the stochastic exponential growth model of Dennis et al. (1991), which has an inherently pessimistic nature when estimating probabilities of persistence (Belovsky et al. 2002), in part because the model does not account for density dependence or refounding (Rieman and McIntyre 1993). Conversely, our persistence probabilities may be optimistic because the model lacks the ability to account for deterministic factors and cannot incorporate catastrophes. Temporal synchrony in the trends of bull trout populations would also result in an underestimation of the risk of extirpation. While we did find some evidence of synchrony between some population, our results and the work of Rieman and McIntyre (1996) support the conclusion that synchrony in trends of bull trout populations is low. The amount of synchrony we observed for the 1994 to 2003 data sets was not greater than one would expect due to Type I errors or chance alone. Overall, we believe those factors affecting the estimates of persistence in a conservative manner outweigh those that influence the model optimistically.

Despite differences of initial population sizes by several orders of magnitude, probabilities of persistence were similar among core areas that had similar estimated values of population growth and variance. These results are similar to other PVA studies and reviews, which found estimates of persistence or extinction risks can be disproportionately influenced by the instantaneous rate of population change (Dennis et al. 1991; Ludwig 1999; Ellner et al. 2002) and the variance in the rate of change (Rieman and McIntyre 1993; Schill et al. 2005), and emphasizes the advantages, in terms of viability, for populations with stable or increasing numbers in a relatively constant environment.

The stochastic exponential growth model of Dennis et al. (1991) assumes that populations are completely independent. Bull trout behavior and the juxtaposition of many local populations across the state of Idaho indicate this is likely not true in the light of metapopulation theory. Across the range of bull trout there is evidence of functioning metapopulations (Whiteley et al. 2004; Rieman and Dunham 2000), as well as data that fails to support metapopulation functionality (Spruell et al. 1999; Kanda and Allendorf 2001). We were limited by the model's inability to incorporate metapopulation theory, and thus our results ignore the likely genetic and demographic benefits of possible straying among adjacent or nearby local populations. The stochastic exponential growth model of Dennis et al. (1991) also does not account for density dependence. Goodman (2002) noted that without density dependence, most model results would trend toward short-term extinction or overly optimistic unlimited population growth, despite using plausible parameter values. Although all of the estimated instantaneous rates of population change for the 11 core areas included in the analysis were positive or very near zero, using these parameters in the model of Dennis et al. (1991) may yield overly optimistic results if density dependence occurs in those bull trout groups. Conversely, using a negative value for μ would yield an unduly pessimistic result (Goodman 2002). Therefore, the most conservative way to interpret our results would be to consider the area between the curves (Figure 8) created using $\mu = 0$ and $\mu = -0.05$ when assessing extirpation risk in light of metapopulation theory

(Schill et al. 2005). Our results at the recovery unit scale indicate that the risk of extirpation is low for bull trout in five of the seven recovery units (Figure 8). Furthermore, the majority of the recovery units (4 of 7) suggested to have low risks of extirpation in the next 100 years fell above the curve created using negative population growth, where persistence estimates should be viewed as pessimistic (Goodman 2002). Our PVA seems to contrast that of Rieman and McIntyre (1993) who found very few populations with >0.95 probability of persisting for 100 years. This is likely the case for a couple of reasons. First, Rieman and McIntyre (1993) of necessity used data, which, in general, were derived from stable or decreasing populations that predominated prior to 1994, while our datasets represented generally increasing populations of bull trout. We derived more pessimistic results from our data sets when we only included data from 1985 through 1993 than when 1994 through 2003 data were used in the model. Second, the spatial scales for which the PVAs were applied differed. While our focus was more in line with the USFWS draft recovery plan for bull trout, emphasizing recovery units and core areas, Rieman and McIntyre (1993) considered individual streams as populations and performed PVA separately for each one. While the differing approaches likely have little effect on estimated population growth rates, it is likely that the smaller scale used by Rieman and McIntyre (1993) resulted in more variability around the estimated growth rate, which was the strongest variable inversely influencing persistence probabilities.

Implicit in the reliability of the PVA results or probabilities of persistence is the similarity of environmental conditions between the next 100 years and the years of data used in the model. While our results suggest that most bull trout populations have a high likelihood of persisting in Idaho for the next 100 years, if environmental conditions change sufficiently to cause increased variability of population growth centered around zero or negative growth, our results would not be realized (Table 7). We concede that the current trend of increasing populations is likely not to hold for the next 100 years, but based on the trend data available in our analysis, it seems implausible that the opposite would hold either. In truth, Idaho bull trout populations will likely fluctuate between periods of increasing and decreasing growth cycles over the next 100 years. We feel that most bull trout populations in Idaho can withstand limited periods of declining population sizes owing their resilience to their large estimated abundance spread over multiple local populations (Figure 8).

We cannot make strong inferences about the persistence probabilities for bull trout in the Kootenai River and Coeur d'Alene River recovery units implied in Figure 8 due to lack of assigned local populations in the recovery unit or in Idaho. In addition, our ability to estimate bull trout abundance for these two recovery units was severely limited by the lack of quantitative sampling data. Therefore, our attempts to perform PVA for these recovery units represent best guesses and should be interpreted accordingly. We clarify that while we refer to the Kootenai River Recovery Unit as a whole, only a portion of the recovery unit (the area within Idaho) was included in our analyses. Bull trout upstream of Libby Dam in Montana and in British Columbia in the Kootenai River drainage appear to be stable and abundant (C. Corsi, IDFG, personal communication).

Of even greater cause for uncertainty for the Coeur d'Alene River Recovery Unit PVA results is the fact that local populations have not been identified in the draft bull trout recovery plan; hence, we assumed one local population for the recovery unit. The relative extirpation risk to bull trout in Idaho's recovery units greatly depends on the number of local populations. For example, probabilities of persistence increase over 2.5 fold when extinction risk due to environmental stochasticity is spread over nine local populations versus a single population.

Theoretically, even in the absence of nonnative trout, existing or additional habitat alterations may lead to continued or even further fragmentation of local populations of bull trout, but we believe it is unlikely that current or further fragmentation would soon threaten the existence of the species in Idaho. Nevertheless, because most recovery units can be divided into several (as many as 126) local populations that may not exchange gene flow on a regular basis, many populations of bull trout do face a variety of risks inherent to their low abundance and fragmented existence, both directional (compensation and depensation) and random (catastrophes, and demographic, genetic, and environmental stochasticity) in effect. Small populations have been shown to lose adaptive genetic variation and gain maladaptive genetic variation at higher rates than larger populations (Lande 1995). However, most literature addressing small population size does not refer to species that contain at least 1 million individuals (even just within Idaho) scattered across a large geographic area and broken into numerous populations, some of which are extremely large.

At a smaller scale, it is difficult to resolve precisely how many bull trout are needed in local populations to ensure long-term persistence and maintain genetic diversity within any given population, and there is no generally agreed upon standard. Franklin (1980) and Soulé (1980) proposed that an effective population size (N_e) of at least 50 individuals is necessary for conservation of genetic diversity in the short term (i.e. several generations) to avoid inbreeding depression, while an N_e of 500 is needed to avoid serious genetic drift in the long term. Hilderbrand and Kershner (2000) suggested that census populations of at least 2,500 cutthroat trout were needed to avoid inbreeding depression, whereas Rieman and Allendorf (2001) recommended populations of at least 1,000 spawning adult bull trout to maintain genetic variation indefinitely. Regardless of how many individuals are needed to maintain genetic diversity, Lande (1988) argued that demography is likely to be more important in determining population viability.

We chose not to quantify the amount of bull trout historical range currently occupied because of the difficulty in delineating actual historical distribution. Rieman et al. (1997) estimated that bull trout in the mid-1990s occupied about 44% of their former range but gave no estimate for Idaho, and they used patch occupancy as opposed to actual kilometers of stream. The results from the workshops we have referred to, where local biologists designated all stream segments according to their local knowledge of known or presumed bull trout status, suggest that bull trout currently occupy 14,551 km of stream within the seven recovery units in Idaho, or 19% of the total stream kilometers within these recovery units. However, bull trout were not found at every sample site within the “bull trout present” stream segments, and they were frequently found at study sites outside this presumed current range. Such a disparity is partly the result of misclassification by the biologists in the workshop, but also may be due in part to the difficulty of detecting bull trout (Peterson and Dunham 2003), especially when abundance is low. Regardless, our contention is that the amount of currently unoccupied range that was historically occupied is unknown, unknowable, and therefore less important than current abundance, trends, and risks of extinction for bull trout. Our results suggest that, in Idaho, bull trout as a species at present are stable and secure regarding these important parameters.

RECOMMENDATIONS

Based on our results, we believe that most bull trout populations in Idaho are stable or increasing. However, this is not universally true. Currently, all bull trout within the Columbia

River DPS are listed as a single population. We believe the trend and PVA results reported here justify refining the Columbia River DPS and managing bull trout populations with more specificity at smaller scales. Perhaps a more justifiable rationale for dividing groups of bull trout is one based on genetics. Spruell et al. (2002) determined that bull trout within the Columbia River DPS belong to three different groups based on microsatellite analysis including: 1) Coastal Group including bull trout in the Deschutes River basin and Columbia River tributaries downstream of the Deschutes River), 2) Snake River Group including bull trout from the John Day, Umatilla, and Walla Walla rivers as well as the Snake River tributaries, and 3) Upper Columbia Group including bull trout primarily in the Clark Fork drainage. We recommend that current efforts to track abundance and trend of bull trout continue across the state, and efforts to obtain quantitative density data of bull trout in the Idaho portions of the Kootenai and Clark Fork recovery units' streams be increased to facilitate easier and more accurate estimations of population sizes. It would be particularly helpful if monitoring and periodic sampling sites were located randomly to allow variance and confidence intervals around extrapolated population estimates to be generated more validly. This is especially true for 1st and 2nd order streams and streams determined to be absent of bull trout during the 2004 biologist workshops. Furthermore, efforts to estimate adult abundance would be extremely helpful in future work relative to assessing whether bull trout core areas have reached recovered goals outlined in the draft bull trout recovery plan USFWS (2000). While preparing this document, it became apparent that we know very little concerning the fluvial and adfluvial migratory forms of bull trout and the role they play in resident bull trout population growth, abundance, and viability. Once basic population parameters have been described for Idaho bull trout populations, including numbers of adult fish, efforts should then be focused on the dynamics between migratory and resident bull trout life forms.

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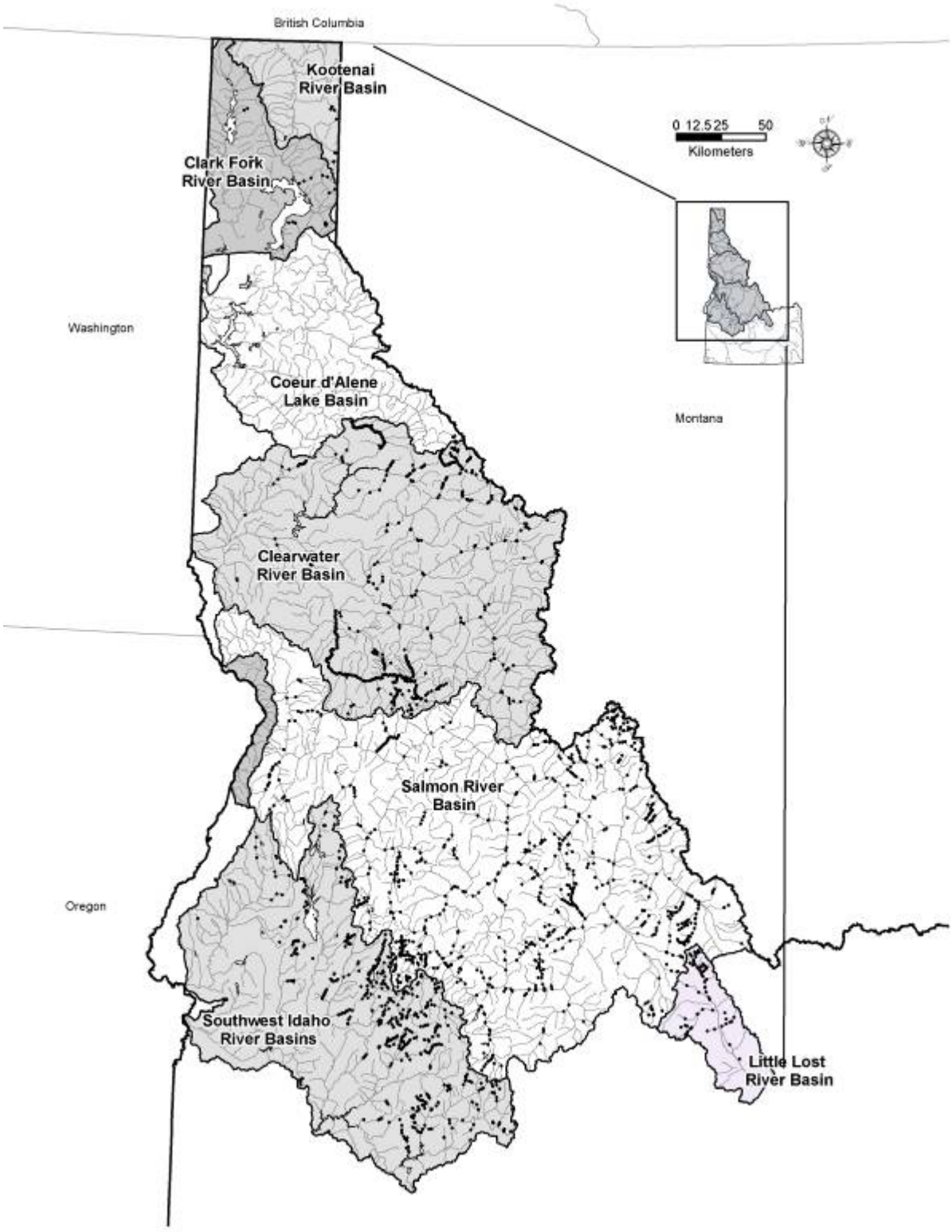

Figure 1. Distribution of study sites (dots) within the bull trout recovery units in Idaho.

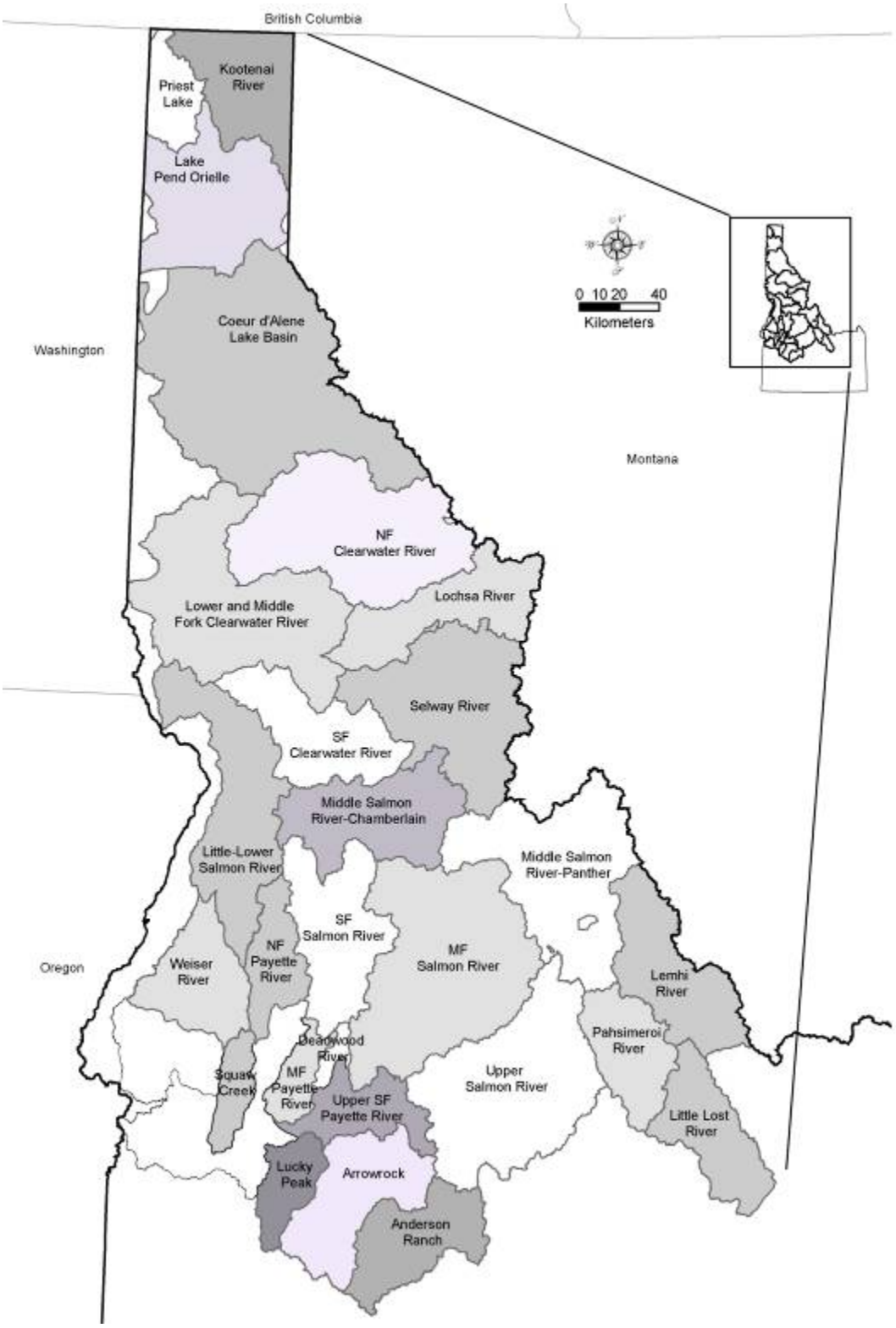

Figure 2. Bull trout core areas in Idaho.

Table 1. Stream network and distributional extent of bull trout (BUT) in Idaho by recovery units (RUs).

Stream network and study sites	Recovery units in Idaho							
	Little Lost	Southwest Idaho	Salmon	Clearwater	Clark Fork	Kootenai	Coeur d'Alene	Total
Total km within RUs	1,798	15,983	27,342	19,289	3,698	1,981	7,356	77,447
Total km within RUs presumed to contain BUT	252	1,649	7,202	4,110	665	268	405	14,551
Total km within RUs presumed to lack BUT or unknown	1,546	14,334	20,140	15,179	3,033	1,713	6,951	62,896
No. of sites in RUs within presumed BUT current range	55	350	748	640	22	10	6	1,831
No. of sites in RUs within presumed BUT range that contained BUT	45	145	393	220	19	7	5	834
No. of sites in RUs outside presumed BUT current range	10	477	136	60	4	3	0	690
No. of sites in RUs outside presumed BUT current range that contained BUT	1	23	24	3	1	1	0	53

Table 2. Summary of recent (post-1994) bull trout (BUT) trend (intrinsic rates of growth, *r*, and 90% confidence intervals) for 18 river drainages and/or core areas within five recovery units in Idaho.

Recovery unit	River drainage or core area	Years of record	Count type	Number of individual count sites	Mean trend value: Annual BUT count	Mean trend value: BUT density (#/100 m)	Post-1994 intrinsic rate of growth (*r*): Estimate	Post-1994 intrinsic rate of growth (*r*): Lower CI	Post-1994 intrinsic rate of growth (*r*): Upper CI
Little Lost River	Little Lost River	6	E-fish	22		1.3[a]	-0.05[b]	NA	NA
Salmon River	Rapid River	32	Weir	1	215.4		0.05	-0.01	0.10
Salmon River	Little Salmon - Lower Salmon River	19	Snorkel	34		2.3	0.05	-0.03	0.14
Salmon River	Middle Fork Salmon River	19	Snorkel	77		0.5	0.07	-0.03	0.17
Salmon River	South Fork Salmon River	19	Snorkel	36		0.7	0.20	0.11	0.30
Salmon River	Middle Salmon River - Chamberlain	19	Snorkel	10		1.1	-0.01	-0.12	0.11
Salmon River	Middle Salmon River - Panther Creek	19	Snorkel	12		0.6	-0.02	-0.15	0.12
Salmon River	Lemhi River	19	Snorkel	10		2.9	0.42	0.18	0.66
Salmon River	East Fork Salmon River	8	Weir	1	97.3		0.08	-0.04	0.10
Salmon River	Upper Salmon River	19	Snorkel	25		0.4	0.14	-0.09	0.37
Clearwater River	North Fork Clearwater River	10	Redd	2	5.8		0.22	0.12	0.33
Clearwater River	Little North Fork Clearwater River	10	Redd	2	7.3		0.17	0.04	0.24
Clearwater River	Lochsa River	19	Snorkel	43		0.7	0.12	-0.15	0.40
Clearwater River	Selway River	19	Snorkel	26		0.4	0.11	-0.01	0.24
Clearwater River	South Fork Clearwater River	19	Snorkel	85		0.5	0.10	0.03	0.17
Clark Fork River	Priest River	14	Redd	5	17.7		-0.03	-0.13	0.07
Clark Fork River	Lake Pend O'reille	21	Redd	6	501.9		0.04	0.00	0.07
Coeur d'Alene River	St. Joe River	12	Redd	1	41.3		0.03	-0.05	0.11

[a] Data is bull trout/100 m²

[b] Average from four separate estimates

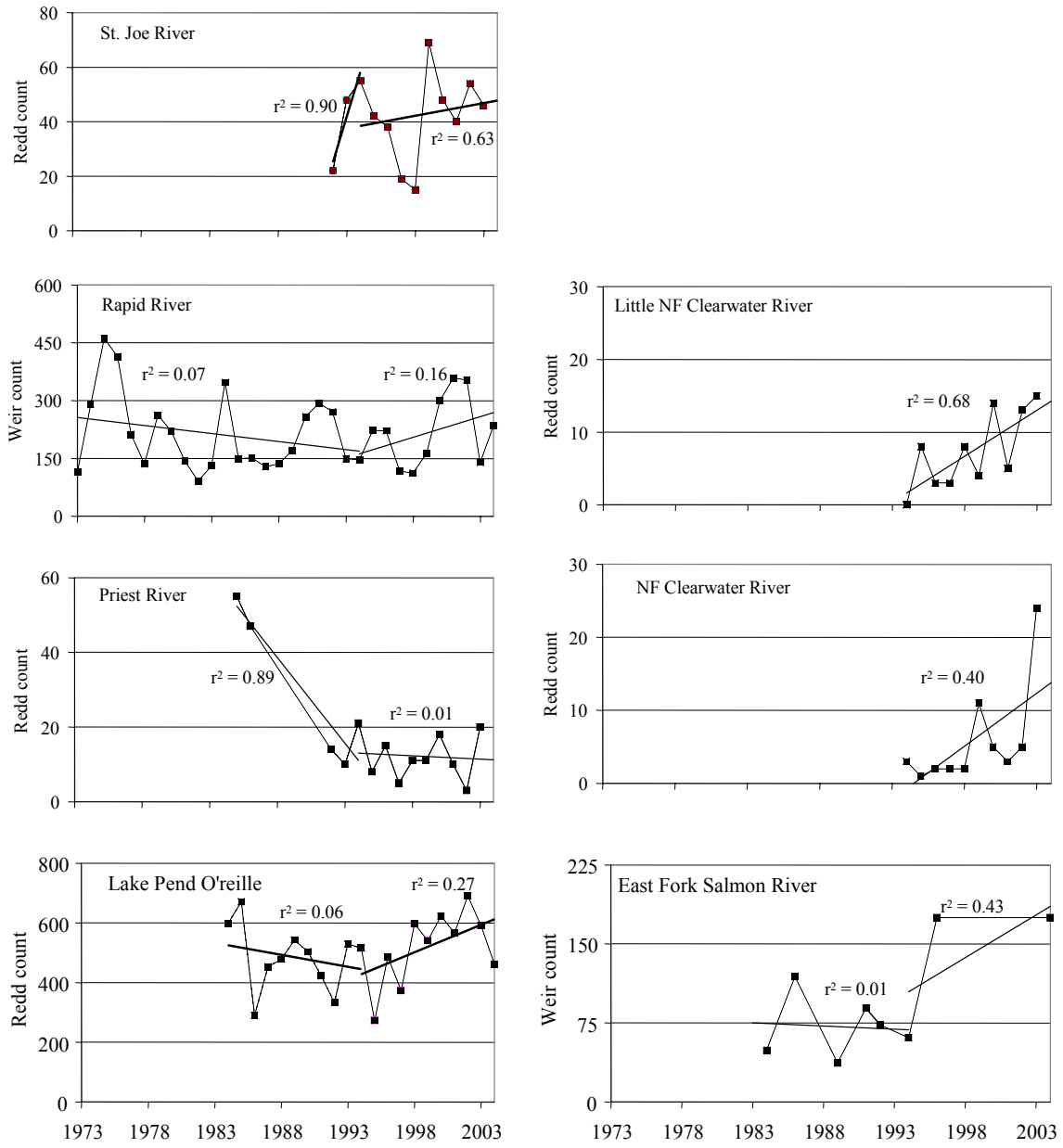

Figure 3. Bull trout redd and weir count trends (pre- and post-1994) from several streams or basins in Idaho. See Table 2 for details.

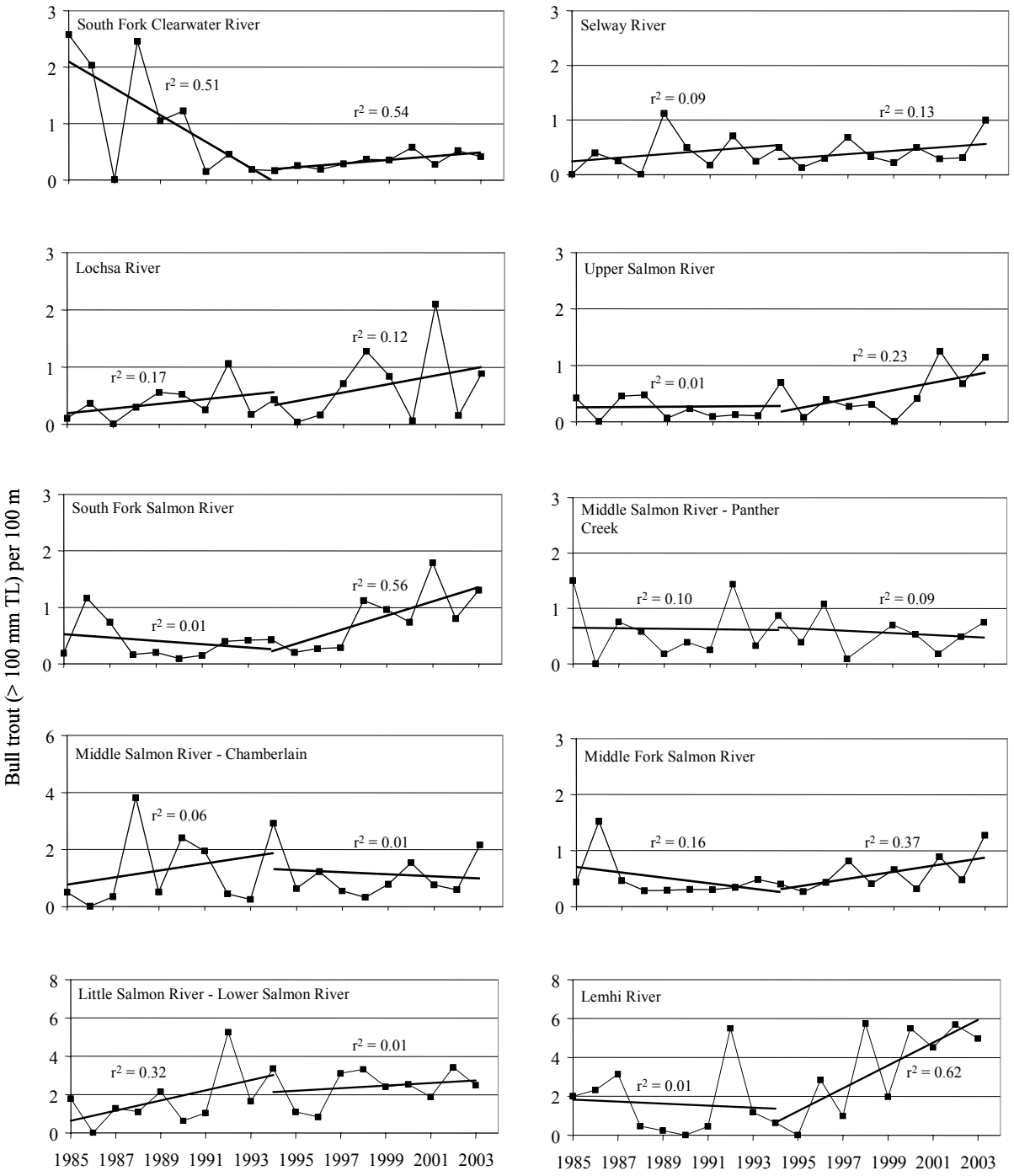

Figure 4. Bull trout snorkel count trend data (pre- and post-1994) for core areas within the Salmon River and Clearwater River recovery units in Idaho. See Table 2 for details.

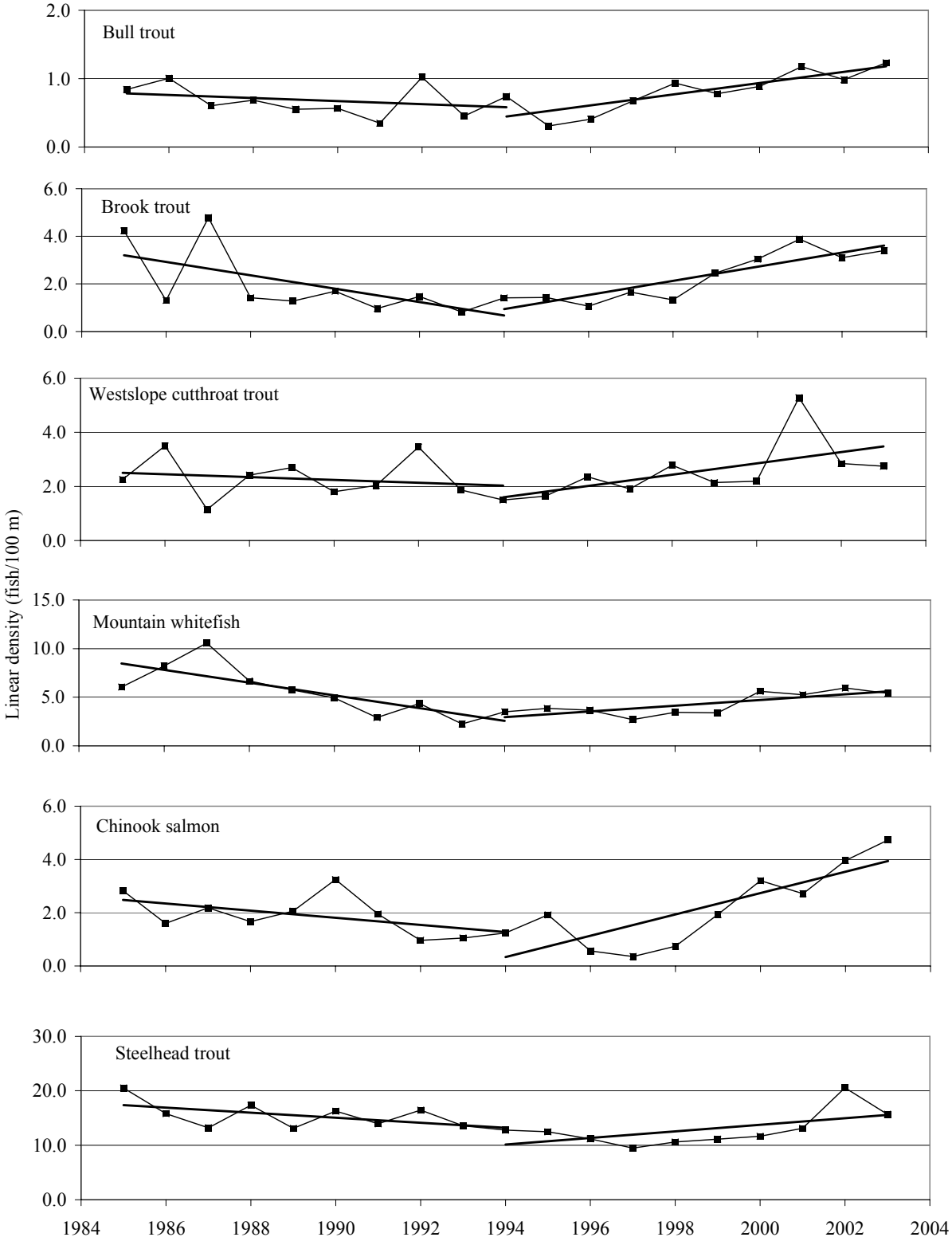

Figure 5. Average linear density (fish/100 m) and trend (pre- and post-1994) at 371 General Parr Monitoring sites in Idaho.

Table 3. Correlation coefficients (*r*) between abundance (fish >100 mm) of individual species of salmonid at 371 General Parr Monitoring sites in Idaho. Asterisks indicate comparisons where correlations are statistically significant at α = 0.05.

	BUT	BKT	WCT	MWF	CHK	STH
Bull trout (BUT)	1					
Brook trout (BKT)	0.48*	1				
Westslope cutthroat trout (WCT)	0.67*	0.13	1			
Mountain whitefish (MWF)	0.28	0.59*	0.08	1		
Chinook salmon - parr only (CHK)	0.42	0.62*	0.14	0.38	1	
Steelhead/redband trout (SHT)	0.29	0.30	0.17	0.40	0.53*	1

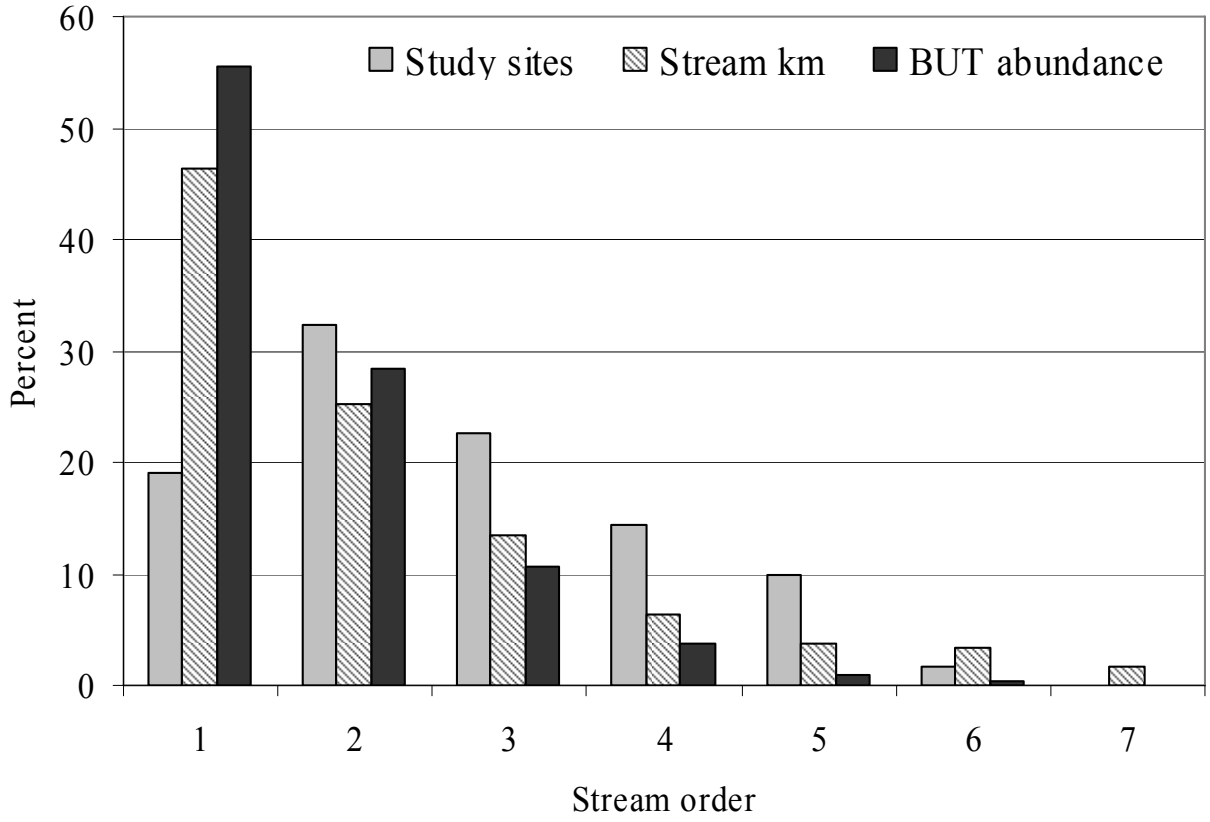

Figure 6. Percent of study sites, kilometers of stream, and total bull trout abundance (>100 mm TL only) by stream order in Idaho.

Table 4. Statewide estimates of bull trout (BUT) in Idaho by stream order and presence category.

Area	Order	Stream km	# of 100 m sections	Avg BUT/ 100 m	BUT Presence	BUT Estimate
Statewide	1	3,589	35,893.6	9.167	Confirmed	329,046.7
		46,467	464,668.7	0.643	Unconfirmed	298,843.3
	2	3,455	34,545.7	7.350	Confirmed	253,927.6
		10,305	103,046.6	0.656	Unconfirmed	67,623.0
	3	2,744	27,440.9	4.234	Confirmed	116,175.8
		3,883	38,829.2	0.132	Unconfirmed	5,136.3
	4	1,987	19,873.9	1.704	Confirmed	33,870.2
		1,190	11,902.7	0.725	Unconfirmed	8,629.2
	5	1,309	13,094.3	0.853	Confirmed	11,168.9
		544	5,443.3	0.000	Unconfirmed	0.0
	6	1,028	10,280.0	0.422	Confirmed	4,343.0
		490	4,901.7	0.000	Unconfirmed	0.0
	7	438	4,376.3	-	Confirmed	-
		29	288.9	-	Unconfirmed	-
	Total	77,458	774,586			1,128,764

Table 5. Number of designated local bull trout populations, study site sample sizes, and approximations of total bull trout abundance in Idaho by recovery units and core areas. Estimates for recovery units (bold) were calculated separately than estimates for core areas by pooling available data from all core areas within the recovery unit. Estimates of abundances for both recovery units and core areas were not made (indicated by NA) when data were insufficient to calculate average bull trout density for some stream orders.

		Within stream segments designated as:				
	Number	bull trout present		bull trout absent of unknown		
Recovery units (bold) and core areas	of local populations	Number of sites	Total abundance	Number of sites	Total abundance	Grand Total
Little Lost River summar	**10**	**55**	**45,124**	**10**	**410**	**45,534**
Little Lost River	10	55	45,124	10	410	45,534
Southwest Idaho summary	**54**	**350**	**78,293**	**455**	**65,063**	**143,356**
Anderson Ranch	15	52	10,412	72	0	10,412
Arrowrock	15	139	45,207	34	7,821	53,028
Lucky Peak	1	0	NA	27	1,532	NA
Deadwood River	5	32	3,319	6	688	4,007
Squaw Creek	2	33	282	25	16,969	17,251
Upper South Fork Payette River	9	75	10,716	92	10,587	21,303
Middle Fork Payette River	1	13	NA	41	0	NA
North Fork Payette River	1	0	NA	111	467	NA
Weiser River	5	6	NA	47	0	NA
Salmon River summary	**125**	**748**	**387,671**	**136**	**254,040**	**641,711**
Upper Salmon River	18	144	144	17	NA	NA
Pahsimeroi River	8	49	49	6	NA	NA
Lemhi River	6	101	101	25	NA	NA
Lake Creek	1	0	0	0	NA	NA
Middle Salmon River - Panther	20	121	121	45	0	72,732
Opal Lake	1	0	0	0	NA	NA
Middle Fork Salmon River	28	202	202	24	71,283	107,282
Middle Salmon River - Chamberlain	9	25	25	10	NA	NA
South Fork Salmon River	27	74	74	3	NA	NA
Little - Lower Salmon River	7	32	32	6	NA	NA
Clearwater River summary	**35**	**640**	**43,259**	**60**	**3,135**	**46,394**
North Fork Clearwater River	11	275	24,739	7	NA	NA
Fish Lake (North Fork Clearwater River)	1	0	NA	0	NA	NA
Lochsa River	16	47	NA	6	NA	NA
Fish Lake (Lochsa River)	1	0	NA	0	NA	NA
Selway River	10	30	NA	6	NA	NA
South Fork Clearwater River	5	259	2,347	16	NA	NA
Lochsa, Selway, and SF Clearwater rivers	32	336	10,317	32	0	10,317
Lower and Middle Fork Clearwater River	1	29	NA	25	NA	NA
Clark Fork River summary	**28**	**22**	**86,666**	**4**	**NA**	**NA**
Lake Pend Oreille	17	20	NA	4	NA	NA
Priest Lakes	11	2	NA	0	NA	NA
Kootenai River summary	**0**	**13**	**16,572**	**3**	**NA**	**NA**
Kootenai River	0	13	16,572	3	NA	NA
Coeur d'Alene River summary	**?**	**6**	**NA**	**0**	**NA**	**NA**
Coeur d'Alene River	?	6	NA	0	NA	NA
State-wide estimate	**252**	**1,834**	**748,532**	**668**	**380,232**	**1,128,764**

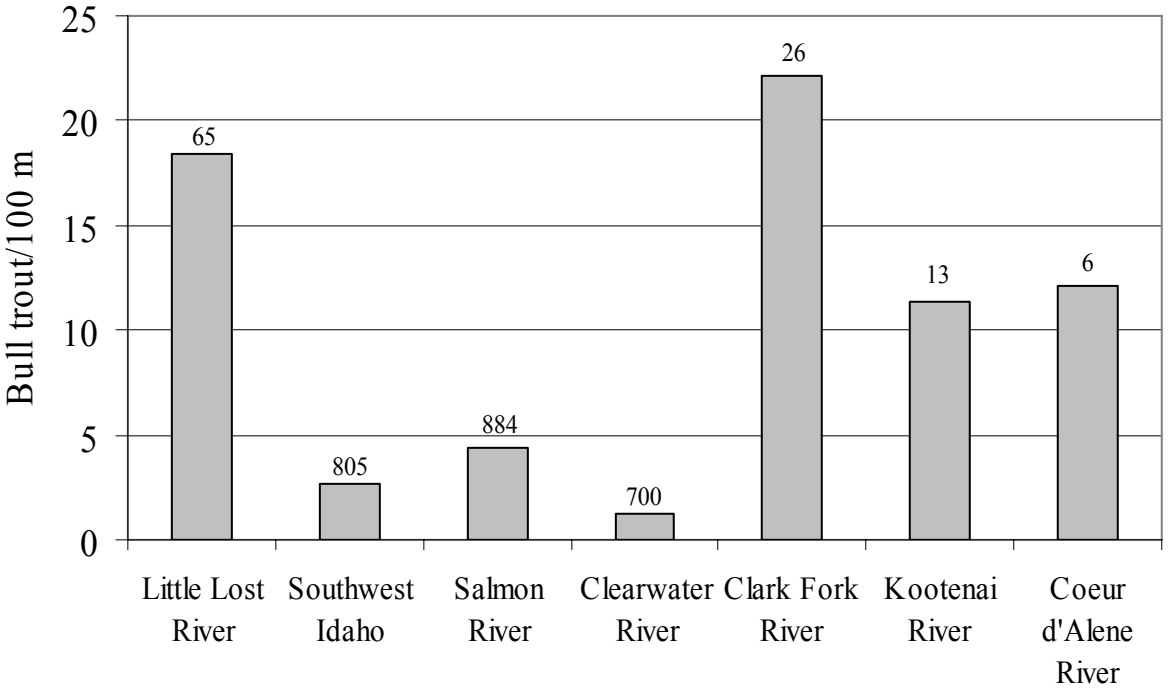

Figure 7. Average linear bull trout densities in seven recovery units in Idaho. Numbers above bars are study site sample sizes for each recovery unit.

Table 6. Probabilities for persistence of bull trout in 11 core areas treated as completely independent groups for 100 year time periods at the 0.95 confidence level. The modeling approach of Dennis et al. (1991) using STOCHMVP was employed using estimated population growth rates and variances. Estimated abundances for streams known to have bull trout and for the bull trout absent and unknown streams were combined (total) and input as the initial population size. Italicized figures represent those obtained by dividing the appropriate recovery unit abundance estimate (see Table 5) by the number of local populations within the respective core areas. Two threshold levels of extinction were used: 10 and 100 individuals.

	Estimated bull trout abundance by GIS coded stream layer					Threshold	
Core Area	Present	Unknown/absent	Total	Estimate of μ	Estimate of σ^2	10	100
Middle Fork Salmon River	35,999	71,283	107,282	0.13	0.54	>0.95	>0.95
Middle Salmon River - Chamberlain	*28,204*	*7,890*	36,094	-0.001	0.71	0.67	0.51
South Fork Salmon River	23,111	*23,670*	46,781	0.12	0.49	>0.95	>0.95
Little Salmon - Lower Salmon River	*21,936*	*6,137*	28,073	-0.08	0.49	0.36	0.22
North Fork Clearwater River	24,739	*793*	25,532	0.06	0.81	0.82	0.68
South Fork Clearwater River	2,347	*360*	2,707	0.1	0.19	>0.95	>0.95
Lochsa River	*16,089*	*1,153*	17,242	0.08	4.95	0.36	0.26
Selway River	*10,056*	*720*	10,776	0.08	0.76	0.83	0.68
Lake Pend Oreille	*52,620*	NA	52,620	-0.01	0.13	>0.95	0.87
Priest Lakes	*34,048*	NA	34,048	-0.005	1.10	0.55	0.41
Coeur d'Alene River (St. Joe River primarily)	*8,315*	*0*	8,315	-0.02	0.40	0.61	0.41

Table 7. Probabilities for persistence of bull trout in Idaho core areas for 100 year time periods at the 0.95 confidence level. The modeling approach of Dennis et al. (1991) using STOCHMVP was employed in three scenarios: modest population growth with low variance, no population growth with modest variance, and negative population growth with high variance (Schill et al. 2005). Estimated abundances for streams known to have bull trout and for the bull trout absent and unknown streams were combined (total) and input as the initial population size. Two threshold levels of extinction were used: 10 and 100 individuals. Italicized figures represent those obtained by dividing the appropriate recovery unit abundance estimate (see Table 5) by the number of local populations within the respective core areas.

					Modest growth (0.005) and low variance (0.05)		Equilibrim growth (0.0) and moderate variance (1.00)		Declining population (-0.05) and high variance (2.0)	
		Estimated bull trout abundance by GIS coded stream layer			Extinction threshold		Extinction threshold		Extinction threshold	
Recovery Unit	Core Area	Present	Unknown/absent	Total	10	100	10	100	10	100
Little Lost River	Little Lost River	45,124	410	45,534	>0.95	>0.95	0.60	0.46	0.34	0.24
Southwest Idaho	Anderson Ranch	10,412	0	10,412	>0.95	>0.95	0.51	0.36	0.27	0.18
Southwest Idaho	Arrowrock	45,207	7,821	53,028	>0.95	>0.95	0.61	0.47	0.34	0.25
Southwest Idaho	Lucky Peak	*1,450*	1,532	2,982	>0.95	>0.95	0.43	0.27	0.22	0.13
Southwest Idaho	Deadwood River	3,319	688	4,007	>0.95	0.94	0.45	0.29	0.23	0.14
Southwest Idaho	Squaw Creek	*282*	16,969	17,251	>0.95	>0.95	0.54	0.39	0.29	0.20
Southwest Idaho	Upper South Fork Payette River	10,716	10,587	21,303	>0.95	>0.95	0.56	0.41	0.30	0.21
Southwest Idaho	North Fork Payette River	*1,450*	0	1,450	>0.95	0.83	0.38	0.21	0.19	0.10
Southwest Idaho	Middle Fork Payette River	*1,450*	467	1,917	>0.95	0.86	0.40	0.23	0.20	0.11
Southwest Idaho	Weiser River	*7,249*	0	7,249	>0.95	>0.95	0.49	0.33	0.26	0.16
Salmon River	Upper Salmon River	31,461	*15,780*	47,241	>0.95	>0.95	0.60	0.46	0.34	0.24
Salmon River	Pahsimeroi River	37,182	*7,890*	45,072	>0.95	>0.95	0.60	0.46	0.33	0.24
Salmon River	Lemhi River	*18,802*	*5,260*	24,062	>0.95	>0.95	0.56	0.42	0.31	0.21
Salmon River	Middle Salmon River - Panther Creek	72,732	0	72,732	>0.95	>0.95	0.63	0.49	0.35	0.26
Clearwater River	Lower and Middle Fork Clearwater	*1,006*	*72*	1,078	>0.95	0.78	0.36	0.19	0.18	0.09
Kootenai River	Kootenai River	16,572	*766*	17,338	>0.95	>0.95	0.54	0.39	0.29	0.20

Table 8. Probabilities for persistence of bull trout in Idaho recovery units for 100 year time horizons at the 0.95 confidence level. The modeling approach of Dennis et al. (1991) using STOCHMVP was employed in three scenarios: modest population growth with low variance, no population growth with modest variance, and negative population growth with high variance (Schill et al. 2005). Estimated abundances for streams known to have bull trout and for the bull trout absent and unknown streams were combined (total) and input as the initial population size. Two threshold levels of extinction were used: 10 and 100 individuals. In addition to the three scenarios, persistence probabilities were calculated for recovery units for which time series data (1994 to 2003) were available.

				Modest growth (0.005) and low variance (0.05)		Equilibrim growth (0.0) and moderate variance (1.00)		Declining population (-0.05) and high variance (2.0)		Observed growth and observed variance	
	Estimated bull trout abundance by GIS coded stream layer			Extinction threshold		Extinction threshold		Extinction threshold		Extinction threshold	
Recovery unit	Present	Unknown/absent	Total	10	100	10	100	10	100	10	100
Clark Fork River	86,666	47,432	134,098	>0.95	>0.95	0.66	0.53	0.38	0.28	>0.95	0.91
Clearwater River	43,259	3,135	46,394	>0.95	>0.95	0.60	0.46	0.34	0.24	0.93	0.86
Coeur d'Alene River	8,315	0	8,315	>0.95	>0.95	0.50	0.34	0.26	0.17	0.74	0.55
Kootenai River	16,572	766	17,338	>0.95	>0.95	0.54	0.39	0.29	0.20	NA	NA
Little Lost River	45,124	410	45,534	>0.95	>0.95	0.60	0.46	0.34	0.24	NA	NA
Salmon River	387,671	254,020	641,691	>0.95	>0.95	0.73	0.62	0.44	0.35	>0.95	>0.95
Southwest Idaho	78,293	65,063	143,356	>0.95	>0.95	0.66	0.53	0.38	0.29	NA	NA

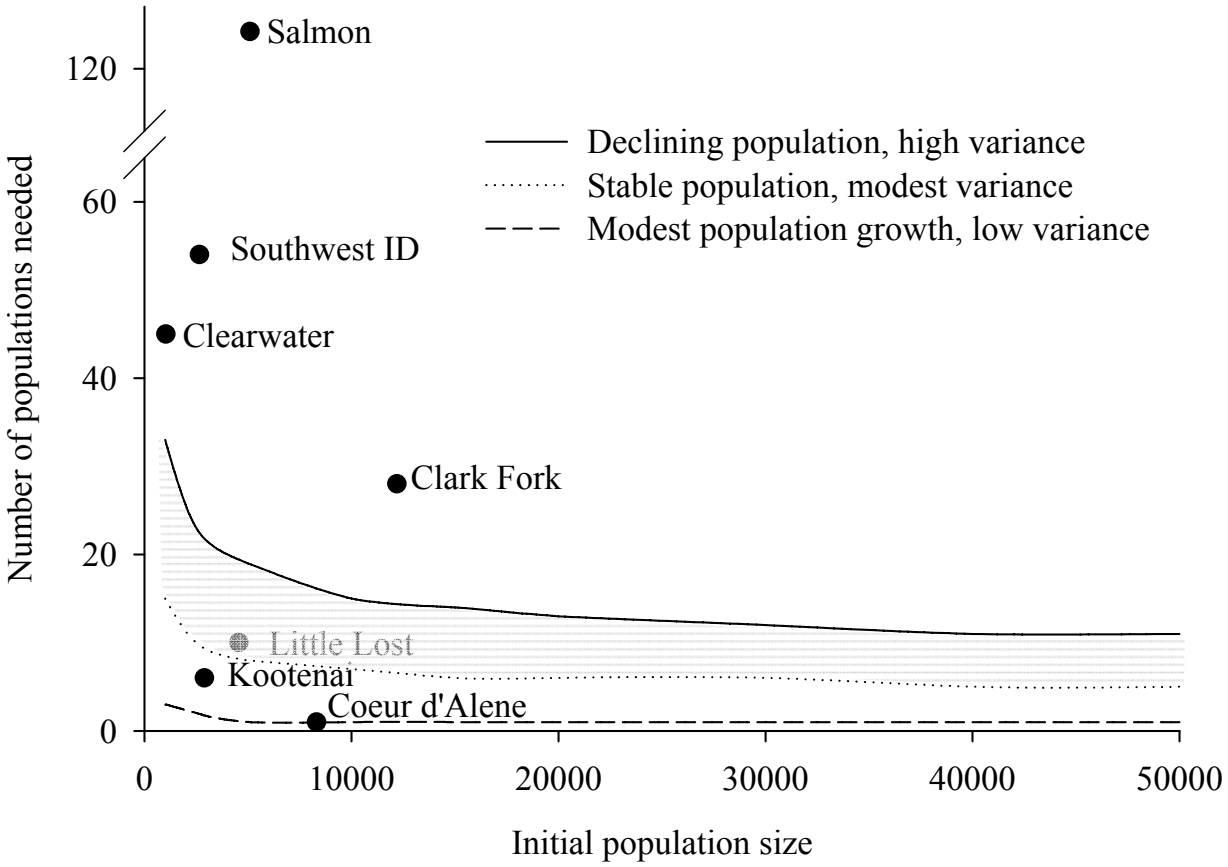

Figure 8. Placement of the seven bull trout recovery units relative to the curves on the graph, which estimate the number of populations necessary to ensure a 0.95 probability of persistence, given three scenarios: 1) modest population growth and low variance ($\mu = 0.005$, $\sigma^2 = 0.05$); 2) equilibrium population (no growth) and modest variance ($\mu = 0$, $\sigma^2 = 1.0$), and (3) declining population and high variance ($\mu = -0.05$, $\sigma^2 = 2.0$). All populations are assumed to be independent. The shaded indicates a conservative estimate, because the model used (Dennis et al. 1991) cannot account for density dependence (Schill et al. 2005; Goodman 2002). Placement of the points representing recovery units were placed according to the number of identified local populations for each recovery unit in the USFWS draft bull trout recovery plan and their average population size (where average population size = recovery unit estimate / number of local populations).

Table 9. Correlation matrix of Pearson product-moment correlation coefficients for time series data sets used in trend and population viability analyses. Correlation coefficients above the diagonal are for the time period 1985 through 1993, and those below the diagonal are for 1994 through 2003. Correlation coefficient values >0.50 are highlighted in gray.

	St. Joe R (redd)	Rapid R (weir)	Priest Lakes (redd)	Lake Pend Oreille (redd)	NF Clear-water (redd)	SF Clear-water (GPM)	Selway R (GPM)	Lochsa R (GPM)	Upper Sal. R (GPM)	SF Salmon (GPM)	Mid. Salmon Panther (GPM)	Mid. Salmon Chamb. (GPM)	Middle Fork Salmon (GPM)	Little and Lower Salmon (GPM)	Lemhi R (GPM)
St. Joe R (redd)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rapid R (weir)	0.31		-0.51	-0.31	NA	-0.39	0.25	0.59	-0.25	-0.40	-0.04	0.23	-0.32	0.18	0.06
Priest Lakes (redd)	0.25	-0.27		0.25	NA	1.00	-0.56	-0.48	0.48	0.24	0.78	-0.09	0.46	-0.51	-0.30
Lake Pend Oreille (redd)	0.27	0.35	0.19		NA	0.26	-0.20	-0.45	-0.02	-0.62	0.19	0.10	-0.53	-0.49	-0.46
NF Clearwater R (redd)	0.36	-0.22	0.42	0.34		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SF Clearwater R (GPM)	0.16	0.34	-0.05	0.62	0.36		-0.28	-0.09	0.52	-0.03	0.27	0.30	0.28	-0.19	-0.22
Selway R (GPM)	-0.15	-0.39	0.44	0.17	0.67	0.23		0.67	-0.22	0.01	-0.18	-0.31	-0.05	0.39	0.09
Lochsa R (GPM)	-0.27	0.00	-0.06	0.21	0.12	-0.14	0.07		0.19	-0.14	0.09	0.01	-0.11	0.72	0.40
Upper Salmon R (GPM)	0.07	0.50	0.18	0.41	0.22	-0.01	0.28	0.50		0.13	0.51	0.26	0.04	0.25	0.44
SF Salmon R (GPM)	0.07	0.29	0.05	0.62	0.42	0.34	0.13	0.81	0.62		0.20	-0.58	0.89	0.29	0.45
Middle Salmon R - Panther (GPM)	0.14	-0.19	0.48	0.09	0.05	-0.29	-0.03	-0.45	-0.18	-0.38		-0.45	0.40	0.44	0.69
Middle Salmon R - Chamberlain (GPM)	0.45	-0.15	0.87	0.21	0.57	0.04	0.62	-0.14	0.36	0.05	0.25		-0.44	-0.45	-0.54
Middle Fork Salmon R (GPM)	-0.02	-0.16	0.11	0.16	0.74	0.06	0.70	0.56	0.49	0.56	-0.24	0.30		0.04	0.20
Little Salmon - Lower Salmon R (GPM)	0.07	-0.29	0.15	0.31	-0.03	0.11	0.26	0.02	0.03	0.01	-0.28	0.32	-0.10		0.83
Lemhi R (GPM)	-0.11	0.40	0.05	0.86	0.29	0.72	0.18	0.27	0.39	0.67	-0.01	-0.03	0.19	0.00	

Table 10. The number of areas identified in the USFWS draft bull trout recovery plan which support bull trout local populations within their respective core areas recovery units in Idaho and the number of these areas which also support brook trout.

Recovery Unit	Core Area	Local Populations	Local pop. with brook trout
Little Lost River	Little Lost River	10	3
Southwest Idaho	Arrowrock	15	4
	Anderson Ranch	15	2
	Lucky Peak	1	1
	Upper South Fork Payette River	9	3
	Deadwood River	5	0
	Middle Fork Payette River	1	1
	North Fork Payette River	1	1
	Squaw Creek	2	2
	Weiser River	5	2
Salmon River	Upper Salmon River	18	13
	Pahsimeroi River	8	5
	Lake Creek	1	0
	Lemhi River	6	4
	Middle Salmon River-Panther	20	11
	Opal Lake	1	0
	Middle Fork Salmon River	28	19
	Middle Salmon River-Chamberlain	9	5
	South Fork Salmon River	27	5
	Little-Lower Salmon River	7	4
Clearwater River	Middle-Lower Clearwater River	1	1
	North Fork Clearwater River	10	3
	Fish Lake (N.F. Clearwater)	1	0
	Lochsa River	7	1
	Fish Lake (Lochsa)	1	0
	Selway River	10	3
	South Fork Clearwater River	5	3
Clark Fork River	Lake Pend Oreille	17	3
	Priest Lakes	11	11
Kootenai River	Kootenai River	0	0
Coeur d'Alene River	Coeur d'Alene Lake Basin	?	0

APPENDICES

Appendix A. Bull trout trend data obtained from redd counts, snorkeling, electrofishing, and weirs. Asterisks indicate sample sites used to represent core areas in the trend analysis when multiple sample sites were available.

Recovery Unit	Core Area	Stream	Transect	Data Type	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Clark Fork River	Lake Pend Oreille	Char Creek		Redd (total count)	18	9	11	0	2					9	37	13	2	14	1	16	17	11	2	8	7	14
Clark Fork River	Lake Pend Oreille	Clark Fork River		Redd (total count)										2	8	17	18	3	7	8	5	5	6	7	8	1
Clark Fork River	Lake Pend Oreille	East Fork*		Redd (total count)	110	24	132	8	59	79	100	29		32	27	28	3	49	22	64	44	54	36	58	38	77
Clark Fork River	Lake Pend Oreille	Gold Creek*		Redd (total count)	131	124	111	78	62	111	122	84	104	93	120	164	95	100	76	120	147	168	127	203	126	167
Clark Fork River	Lake Pend Oreille	Granite Creek		Redd (total count)	3	81	37	37	30					0	7	11	9	47	90	49	41	25	7	57	101	149
Clark Fork River	Lake Pend Oreille	Grouse Creek*		Redd (total count)	2	108	55	13	56	24	50	48	33	17	23	18	0	50	8	44	50	77	18	42	45	28
Clark Fork River	Lake Pend Oreille	Johnson Creek*		Redd (total count)	13	33	23	36	10	4	17	33	25	16	23	3	4	5	27	17	31	4	34	31	0	32
Clark Fork River	Lake Pend Oreille	Lightning Creek		Redd (total count)	28	9	46	14	4					11	2	5	0	6	0	3	16	4	7	8	8	9
Clark Fork River	Lake Pend Oreille	Morris Creek		Redd (total count)																	1	1	0	7	1	1
Clark Fork River	Lake Pend Oreille	North Gold Creek*		Redd (total count)	16	37	52	8	36	24	37	35	41	41	32	27	31	39	19	22	16	19	16	24	21	56
Clark Fork River	Lake Pend Oreille	Pack River		Redd (total count)	34	37	49	25	14					65	21	22	0	6	4	17	0	8	28	22	24	31
Clark Fork River	Lake Pend Oreille	Porcupine Creek		Redd (total count)	37	52	32	1	9					4	6	1	2	0	0	0	4	4	0	0	5	10
Clark Fork River	Lake Pend Oreille	Rattle Creek		Redd (total count)	51	32	21	10	35					10	8	0	1	10	2	15	13	12	67	33	37	34
Clark Fork River	Lake Pend Oreille	Savage Creek		Redd (total count)	36	12	29		0					1	6	6	0	0	0	0	4	2	4	15	7	15
Clark Fork River	Lake Pend Oreille	Strong Creek		Redd (total count)																				0		0
Clark Fork River	Lake Pend Oreille	Sullivan Springs		Redd (total count)	9	8	14		6					0	24	31	9	15	42	10	22	19	8	15	12	14
Clark Fork River	Lake Pend Oreille	Trestle Creek*		Redd (total count)	298	272	298	147	230	236	217	274	220	134	304	276	140	243	221	330	253	301	335	333	361	102
Clark Fork River	Lake Pend Oreille	Twin Creek		Redd (total count)	7	25	5	28	0					3	4	0	5	16	6	10	19	10	1	8	3	6
Clark Fork River	Lake Pend Oreille	Wellington Creek		Redd (total count)	21	18	15	7	2					9	4	9	1	5	2	1	22	8	7	7	8	7
Clark Fork River	Priest Lakes	Bench Creek*	Mouth upstream 0.8 km	Redd (total count)			1	2						0	2	2	0	1	0	0	0	0	0	0	0	
Clark Fork River	Priest Lakes	Boulder Creek	Mouth to waterfall	Redd (total count)										0	0	0		0	0	0		0				
Clark Fork River	Priest Lakes	Caribou Creek	Mouth to old road crossing	Redd (total count)											1	0	0	0	0	0						
Clark Fork River	Priest Lakes	Cedar Creek	Mouth upstream 1.6 km	Redd (total count)											0	2	1	0	1	0	0	0	0	0	0	
Clark Fork River	Priest Lakes	Gold Creek*	Mouth to culvert	Redd (total count)			24	23						5	2	6	5	3	0	1	1	9	5	2	2	
Clark Fork River	Priest Lakes	Hughes Creek	F.S. road 622 to mouth	Redd (total count)			4	0							1			2	3	1	0	2	6	1	0	
Clark Fork River	Priest Lakes	Hughes Creek*	Trail 312 to trail 311	Redd (total count)			1	17						7	3	2	0	1	4	0	1	0	0	0	1	
Clark Fork River	Priest Lakes	Hughes Creek*	Trail 311 to F.S. road 622	Redd (total count)			35	2						2	0	7	1	2	0	0	0	0	0	0	1	
Clark Fork River	Priest Lakes	Jackson Creek	Mouth to F.S. trail 311	Redd (total count)										4	0	0	0	0	0	0				0	0	
Clark Fork River	Priest Lakes	Lime Creek	Mouth upstream 0.8 km	Redd (total count)			4	1						0	0			0	2	0	1	0	0	0	0	
Clark Fork River	Priest Lakes	Rock Creek	Mouth to F.S. trail 308	Redd (total count)										0	0			2	1	0		0	0	0		
Clark Fork River	Priest Lakes	Ruby Creek	Mouth to waterfall	Redd (total count)										0	0				0	0				0		
Clark Fork River	Priest Lakes	Trapper Creek	Mouth upstream 5.0 km	Redd (total count)											4	4	2	5	3	8	2	0	1	0	0	
Clark Fork River	Priest Lakes	Upper Priest River	Falls to Rock Cr.	Redd (total count)														15	4	15	33	7	7	17	8	
Clark Fork River	Priest Lakes	Upper Priest River	Rock Cr. to Lime Cr.	Redd (total count)											2	1	1	2	0	3	7	0	2	0	0	
Clark Fork River	Priest Lakes	Upper Priest River	Snow Cr. to Hughes Cr.	Redd (total count)											0	0		0	3	7	4	2	8	3	13	
Clark Fork River	Priest Lakes	Upper Priest River	Hughes Cr. to Priest Lake	Redd (total count)											0	0		0			0	0				
Clark Fork River	Priest Lakes	Upper Priest River*	Lime Cr. to Snow Cr.	Redd (total count)			12	5							3	4	2	8	1	10	9	9	5	1	16	
Clearwater River	NF Clearwater River	Black Canyon		Redd (total count)																				1		
Clearwater River	NF Clearwater River	Bostonia Creek*		Redd (total count)												0	0	0	0	0	4	1	1	1	18	
Clearwater River	NF Clearwater River	Boundary Creek		Redd (total count)																					2	
Clearwater River	NF Clearwater River	Buck Creek		Redd (total count)																					5	
Clearwater River	NF Clearwater River	Butte Creek		Redd (total count)																			5	0		
Clearwater River	NF Clearwater River	Canyon Creek		Redd (total count)																					0	
Clearwater River	NF Clearwater River	Collins Creek		Redd (total count)																			0			
Clearwater River	NF Clearwater River	Floodwood Creek		Redd (total count)																				4	0	
Clearwater River	NF Clearwater River	Goose Creek		Redd (total count)																			1	0	2	
Clearwater River	NF Clearwater River	Gover Creek		Redd (total count)																					1	
Clearwater River	NF Clearwater River	Hidden Creek		Redd (total count)																				1	0	
Clearwater River	NF Clearwater River	Isabella Creek		Redd (total count)																				1	1	
Clearwater River	NF Clearwater River	Lake Creek		Redd (total count)																		19	7	20	14	
Clearwater River	NF Clearwater River	Little Lost Lake Creek*		Redd (total count)												0	1	1	1	7	3	1		6	7	
Clearwater River	NF Clearwater River	Little Moose Creek		Redd (total count)																			0			

Appendix A.-Continued.

Recovery Unit	Core Area	Stream	Transect	Data Type	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Clearwater River	NF Clearwater River	Little NF Clearwater R.	1268 Bridge to Lund Cr.	Redd (total count)																			17	6	13	
Clearwater River	NF Clearwater River	Little NF Clearwater R.	Lund Cr. to Lost Lake Cr.	Redd (total count)														3	1	9	8	3	12	7	7	
Clearwater River	NF Clearwater River	Little NF Clearwater R.	Lost Lake Cr. to headwaters	Redd (total count)												0	2	0	0		5	1		5	6	
Clearwater River	NF Clearwater River	Long Creek		Redd (total count)																				5	0	
Clearwater River	NF Clearwater River	Lost Lake Creek		Redd (total count)												0	0	0	0		1			0		
Clearwater River	NF Clearwater River	Lund Creek*		Redd (total count)												0	7	2	2	1	1	13	5	7	8	
Clearwater River	NF Clearwater River	Moose Creek		Redd (total count)																		0	0	0	0	
Clearwater River	NF Clearwater River	NF Kelley Creek		Redd (total count)																			14			
Clearwater River	NF Clearwater River	Niagra Gulch		Redd (total count)																		2	5	6	10	
Clearwater River	NF Clearwater River	Osier Creek		Redd (total count)																		3	0	2	0	
Clearwater River	NF Clearwater River	Placer Creek*		Redd (total count)												3	1	2	2	2	7	4	2	4	6	
Clearwater River	NF Clearwater River	Pollock Creek		Redd (total count)																					1	
Clearwater River	NF Clearwater River	Quartz Creek		Redd (total count)																			4	0	0	
Clearwater River	NF Clearwater River	Rocky Run Creek		Redd (total count)																				5	1	
Clearwater River	NF Clearwater River	Ruby Creek		Redd (total count)																	0	0				
Clearwater River	NF Clearwater River	Rutledge Creek		Redd (total count)																					1	
Clearwater River	NF Clearwater River	Skull Creek		Redd (total count)																				0	6	
Clearwater River	NF Clearwater River	Stony Creek		Redd (total count)																				4	0	
Clearwater River	NF Clearwater River	Swamp Creek		Redd (total count)																		2	0	1	0	
Clearwater River	NF Clearwater River	Upper NF		Redd (total count)																					7	
Clearwater River	NF Clearwater River	Vanderbilt Gulch		Redd (total count)																			24	18	13	
Clearwater River	NF Clearwater River	Weitas Creek		Redd (total count)																		1				
Clearwater River	NF Clearwater River	Windy Creek		Redd (total count)																	2					
Coeur d'Alene River	Coeur d'Alene River	Aspen Creek		Redd (total count)																				0		
Coeur d'Alene River	Coeur d'Alene River	Bacon Creek		Redd (total count)										0												
Coeur d'Alene River	Coeur d'Alene River	Bad Bear Creek		Redd (total count)											0	0									0	
Coeur d'Alene River	Coeur d'Alene River	Bean Creek		Redd (total count)										14			0									
Coeur d'Alene River	Coeur d'Alene River	Beaver Creek		Redd (total count)										2	2	0	0	0	0	1	0		0	0	0	
Coeur d'Alene River	Coeur d'Alene River	California Creek		Redd (total count)										2	4	0	2	3	0			0	0	0	0	
Coeur d'Alene River	Coeur d'Alene River	Copper Creek		Redd (total count)												0		0						0	0	
Coeur d'Alene River	Coeur d'Alene River	East Fork Bluff Creek		Redd (total count)										0												
Coeur d'Alene River	Coeur d'Alene River	Entente Creek		Redd (total count)																	0			1	0	
Coeur d'Alene River	Coeur d'Alene River	Fly Creek		Redd (total count)										1			0	0	0	2	0			1	0	
Coeur d'Alene River	Coeur d'Alene River	Gold Creek	Lower	Redd (total count)											0				0		0				0	
Coeur d'Alene River	Coeur d'Alene River	Gold Creek	Middle	Redd (total count)													0				0					
Coeur d'Alene River	Coeur d'Alene River	Gold Creek	Upper	Redd (total count)											2			1	1	0						
Coeur d'Alene River	Coeur d'Alene River	Gold Creek	All	Redd (total count)																			1	0		
Coeur d'Alene River	Coeur d'Alene River	Heller Creek		Redd (total count)										0	0	0	0		1	0	0	0		0	0	
Coeur d'Alene River	Coeur d'Alene River	Indian Creek		Redd (total count)										0	0											
Coeur d'Alene River	Coeur d'Alene River	Medicine Creek*		Redd (total count)										11	33	48	17	23	13	11	48	43	16	42	28	
Coeur d'Alene River	Coeur d'Alene River	Mosquito Creek		Redd (total count)										0		0	0	4	0	2						
Coeur d'Alene River	Coeur d'Alene River	Quartz Creek		Redd (total count)																				0		
Coeur d'Alene River	Coeur d'Alene River	Red Ives Creek		Redd (total count)											0	1	1	0	1	0	0	0	0	0	0	
Coeur d'Alene River	Coeur d'Alene River	Ruby Creek		Redd (total count)										0	1		8									
Coeur d'Alene River	Coeur d'Alene River	Sherlock Creek		Redd (total count)										0	3	0	2	1	1	0	1	0			0	
Coeur d'Alene River	Coeur d'Alene River	Simmons Creek	Lower	Redd (total count)											0	0	0						0			
Coeur d'Alene River	Coeur d'Alene River	Simmons Creek	NF to Three Lakes	Redd (total count)											5	0										
Coeur d'Alene River	Coeur d'Alene River	Simmons Creek	Three Lakes to Rd 1278	Redd (total count)											3	5	5	0	0	0	0					
Coeur d'Alene River	Coeur d'Alene River	Simmons Creek	Rd 1278 to Washout	Redd (total count)											0	0	0	1	0	1	0					
Coeur d'Alene River	Coeur d'Alene River	Simmons Creek	Upstream of Washout	Redd (total count)											0				0							
Coeur d'Alene River	Coeur d'Alene River	Simmons Creek	East Fork	Redd (total count)												0										
Coeur d'Alene River	Coeur d'Alene River	St. Joe River	below Tento Creek	Redd (total count)														0								
Coeur d'Alene River	Coeur d'Alene River	St. Joe River	Spruce Tree to St. Joe Ldg.	Redd (total count)													0									
Coeur d'Alene River	Coeur d'Alene River	St. Joe River	St. Joe Ldg to Broken Leg	Redd (total count)													4									
Coeur d'Alene River	Coeur d'Alene River	St. Joe River	Broken Leg Cr upstream	Redd (total count)													0									
Coeur d'Alene River	Coeur d'Alene River	St. Joe River	Bean to Heller Cr.	Redd (total count)										0	0											
Coeur d'Alene River	Coeur d'Alene River	St. Joe River*	Heller to St. Joe Lake	Redd (total count)										10	14	3	20	14	6	0	10	2	11	3	9	
Coeur d'Alene River	Coeur d'Alene River	Three Lakes Creek		Redd (total count)														0								

Appendix A.-Continued.

Recovery Unit	Core Area	Stream	Transect	Data Type	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Coeur d'Alene River	Coeur d'Alene River	Timber Creek		Redd (total count)											0	1	0									
Coeur d'Alene River	Coeur d'Alene River	Wampus Creek		Redd (total count)											0	0										
Coeur d'Alene River	Coeur d'Alene River	Washout Creek		Redd (total count)											3	0	0	0	0							
Coeur d'Alene River	Coeur d'Alene River	Wisdom Creek*		Redd (total count)										1	1	4	5	1	0	4	11	3	13	9	9	
Coeur d'Alene River	Coeur d'Alene River	Yankee Bar Creek		Redd (total count)										1	0				0			1	0	0	0	
Kootenai River	Kootenai River	Boulder Creek		Redd (total count)																			2	2	0	
Kootenai River	Kootenai River	North Callahan Creek		Redd (total count)																				13	30	
Kootenai River	Kootenai River	South Callahan Creek		Redd (total count)																				4	10	
Little Lost River	Little Lost River	Little Lost River		Electrofishing (fish/100m²)					2.6								0.5		0.0							0.1
Little Lost River	Little Lost River	Sawmill Creek	BLM Sawmill #2	Electrofishing (fish/100m²)		0.3	1.7	1.3	0.0						0.3				0.2				0.7			
Little Lost River	Little Lost River	Sawmill Creek	BLM Sawmill #3	Electrofishing (fish/100m²)		0.9	0.4	0.2	0.3						0.2				0.4				0.4			
Little Lost River	Little Lost River	Timber Creek		Electrofishing (fish/100m²)					7.5								4.2		8.1			14.1	14.3			5.1
Little Lost River	Little Lost River	Wet Creek		Electrofishing (fish/100m²)													7.9	8.4			12.4		10.9			0.3
Salmon River	Middle Salmon R. - Panther	Hat Creek		Snorkel (fish >100mm)																		26	12	35	25	33
Salmon River	Middle Salmon R. - Panther	Little Deep Creek		Snorkel (fish >100mm)																	3	0	0	5	1	0
Salmon River	Middle Salmon R. - Panther	Little Deep Creek		Redd (total count)																	24	22	14	70	39	26
Salmon River	Middle Salmon R. - Panther	Napias Creek		Redd (total count)																	36	15	6	30	28	26
Salmon River	Middle Salmon R. - Panther	Panther Creek		Snorkel (fish >100mm)																			11	16	14	4
Salmon River	Middle Salmon R. - Panther	Panther Creek		Redd (total count)																		61	39	57	46	32
Salmon River	Upper Salmon River	Alpine Creek		Redd (total count)																1	3	15	26	22	25	10
Salmon River	Upper Salmon River	East Fork Salmon River		Weir (total count)		49		119			37		89	73		61		175								175
Salmon River	Upper Salmon River	Fish Hook Creek		Redd (total count)																16	15	30	26	23	23	11
Southwest Idaho	Arrowrock	North Fork Boise River		Weir (total count)																	261	447	247	141	84	104

Recovery Unit	Core Area	Stream	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Salmon River	Little Salmon - Lower Salmon R.	Rapid River Weir	114	290	461	414	212	136	262	220	143	91	131	347	149	151	128	136	170	258	293	271	149	146	223	221	117	112	163	300	359	353	139	235

Appendix B. Average densities of bull trout/100 m^2 for GPM snorkel sites from 1985 through 2003.

Core Area	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Lemhi River	0.26	0.22	0.30	0.05	0.03	0.02	0.05	0.73	0.11	0.08	0.02	0.40	0.10	1.14	0.21	0.65	0.83	0.65	0.73
Little Salmon River - Lower Salmon River	0.17	0.00	0.17	0.13	0.22	0.06	0.09	0.51	0.18	0.39	0.11	0.07	0.26	0.34	0.23	0.21	0.26	0.21	0.37
Middle Fork Salmon River	0.05	0.12	0.04	0.04	0.04	0.03	0.05	0.04	0.05	0.06	0.02	0.04	0.07	0.05	0.05	0.16	0.03	0.14	0.04
Upper Salmon River	0.05	0.12	0.04	0.04	0.04	0.03	0.05	0.04	0.05	0.06	0.02	0.04	0.07	0.05	0.05	0.16	0.03	0.14	0.04
Middle Salmon River - Chamberlain	0.05	0.00	0.07	0.52	0.06	0.32	0.22	0.08	0.04	0.27	0.07	0.08	0.03	0.04	0.08	0.29	0.11	0.06	0.11
Middle Salmon River - Panther Creek	0.08	0.00	0.16	0.07	0.03	0.07	0.04	0.28	0.06	0.17	0.04	0.08	0.01	0.06	0.05	0.05	0.01	0.05	
South Fork Salmon River	0.02	0.14	0.08	0.02	0.02	0.01	0.04	0.03	0.03	0.04	0.01	0.03	0.02	0.08	0.10	0.13	0.07	0.20	0.07
Pahsimeroi River	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00					
Lochsa River	0.02	0.01	0.00	0.05	0.04	0.06	0.01	0.13	0.02	0.03	0.00	0.02	0.09	0.20	0.10	0.00	0.34	0.01	0.10
Selway River	0.00	0.03	0.02	0.00	0.07	0.03	0.01	0.08	0.01	0.04	0.01	0.02	0.05	0.05	0.01	0.06	0.02	0.03	0.10
South Fork Clearwater	0.28	0.23	0.00	0.28	0.11	0.17	0.02	0.07	0.04	0.02	0.04	0.03	0.06	0.05	0.05	0.13	0.04	0.06	0.04

Appendix C. Annual average brook trout, bull trout, westslope cutthroat trout, steelhead trout, mountain whitefish, and Chinook salmon counts (fish >100 mm/100 m) counted at GPM snorkel sites from 1985 through 2003.

Species	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Brook trout	4.23	1.31	4.78	1.42	1.28	1.70	0.97	1.47	0.82	1.41	1.43	1.07	1.65	1.33	2.46	3.04	3.88	3.10	3.40
Bull trout	0.84	1.01	0.61	0.68	0.55	0.57	0.35	1.02	0.45	0.74	0.31	0.41	0.68	0.94	0.78	0.89	1.18	0.99	1.23
Westslope cutthroat trout	2.26	3.50	1.15	2.42	2.69	1.80	2.04	3.45	1.88	1.50	1.64	2.36	1.91	2.78	2.14	2.19	5.28	2.85	2.75
Mountain whitefish	6.05	8.23	10.57	6.67	5.76	4.93	2.91	4.35	2.25	3.49	3.85	3.68	2.71	3.45	3.40	5.61	5.26	5.95	5.41
Chinook salmon	2.83	1.60	2.18	1.66	2.06	3.24	1.95	0.97	1.05	1.24	1.92	0.57	0.36	0.74	1.94	3.20	2.71	3.96	4.73
Steelhead trout	20.51	15.82	13.22	17.35	13.09	16.28	13.93	16.44	13.56	12.78	12.48	11.17	9.49	10.61	11.13	11.66	13.10	20.55	15.69

Appendix D. Observed bull trout densities at 2,525 sites across Idaho.

Core area	Stream	BUT/100m
Anderson Ranch	Bear Cr	0.0
Anderson Ranch	Bear Cr	0.0
Anderson Ranch	Bear Cr	0.0
Anderson Ranch	Bear Cr	0.0
Anderson Ranch	Bear Cr	0.0
Anderson Ranch	Bear Cr	0.0
Anderson Ranch	Bear Cr	0.0
Anderson Ranch	Blackhorse	0.0
Anderson Ranch	Blackhorse	0.0
Anderson Ranch	Blackhorse	0.0
Anderson Ranch	Boardman	17.5
Anderson Ranch	Boardman	17.6
Anderson Ranch	Boardman	27.3
Anderson Ranch	Cayuse Cr	0.0
Anderson Ranch	Cayuse Cr	0.0
Anderson Ranch	Cayuse Cr	0.0
Anderson Ranch	Charcoal	0.0
Anderson Ranch	Deer Creek	0.0
Anderson Ranch	Deer Creek	0.0
Anderson Ranch	Dog Creek	0.0
Anderson Ranch	Dog Creek	0.0
Anderson Ranch	Dog Creek	0.0
Anderson Ranch	Dog Creek	0.0
Anderson Ranch	Dog Creek	0.0
Anderson Ranch	Dog Creek	1.1
Anderson Ranch	East Fork	0.0
Anderson Ranch	East Fork	0.0
Anderson Ranch	East Fork	0.0
Anderson Ranch	East Fork	0.0
Anderson Ranch	East Fork	0.0
Anderson Ranch	East Fork	0.0
Anderson Ranch	East Fork	0.0
Anderson Ranch	East Fork	0.0
Anderson Ranch	East Fork	0.8
Anderson Ranch	Elk Creek	0.0
Anderson Ranch	Elk Creek	0.0
Anderson Ranch	Elk Creek	0.7
Anderson Ranch	Elk Creek	1.3
Anderson Ranch	Elk Creek	1.9
Anderson Ranch	Elk Creek	38.1
Anderson Ranch	Emma Creek	16.5
Anderson Ranch	Emma Creek	20.0
Anderson Ranch	Emma Creek	23.4
Anderson Ranch	Fall Creek	0.0
Anderson Ranch	Fall Creek	0.0
Anderson Ranch	Fall Creek	0.0
Anderson Ranch	Fall Creek	0.0
Anderson Ranch	Fall Creek	0.0
Anderson Ranch	Fall Creek	0.0
Anderson Ranch	Fall Creek	0.0
Anderson Ranch	Fall Creek	0.0
Anderson Ranch	Feather R	0.0
Anderson Ranch	Feather R	0.0
Anderson Ranch	Feather R	0.0
Anderson Ranch	Feather R	0.0
Anderson Ranch	Green Cr	0.0
Anderson Ranch	Green Cr	0.0
Anderson Ranch	Green Cr	0.0
Anderson Ranch	Grindston	0.0
Anderson Ranch	Grindston	0.0
Anderson Ranch	Grindston	0.0
Anderson Ranch	Grouse Cr	0.0
Anderson Ranch	Grouse Cr	0.0
Anderson Ranch	Guay Cr	0.0
Anderson Ranch	Lincoln C	0.0
Anderson Ranch	Little Sm	0.0
Anderson Ranch	Little Sm	0.0
Anderson Ranch	Loggy Cr	7.0
Anderson Ranch	Loggy Cr	14.0
Anderson Ranch	Middle Pa	0.0
Anderson Ranch	Middle Pa	0.0
Anderson Ranch	North Fork	0.0
Anderson Ranch	North Fork	0.0
Anderson Ranch	North Fork	0.0
Anderson Ranch	North Fork	0.0
Anderson Ranch	North Fork	0.0
Anderson Ranch	North Fork	1.0
Anderson Ranch	Red Warrior Cr	0.0
Anderson Ranch	Ross Fork	0.0
Anderson Ranch	Ross Fork	0.0
Anderson Ranch	Ross Fork	1.0
Anderson Ranch	Skeleton	1.5
Anderson Ranch	Skunk Cr	0.0
Anderson Ranch	Skunk Cr	0.0
Anderson Ranch	Skunk Cr	0.0
Anderson Ranch	Snowslide	0.0
Anderson Ranch	Snowslide	0.0
Anderson Ranch	Snowslide	41.8
Anderson Ranch	South Fork	0.0
Anderson Ranch	South Fork	0.0
Anderson Ranch	South Fork	0.0
Anderson Ranch	South Fork	0.0
Anderson Ranch	South Fork	1.7
Anderson Ranch	Spring Cr	0.0
Anderson Ranch	Spring Cr	0.0
Anderson Ranch	Spring Cr	0.0
Anderson Ranch	Steel Cr	0.0
Anderson Ranch	Tally Cr	0.0
Anderson Ranch	Taylor Cr	0.0
Anderson Ranch	Three Fork	0.0
Anderson Ranch	Three Fork	0.0
Anderson Ranch	UNNAMED	0.0
Anderson Ranch	UNNAMED	0.0
Anderson Ranch	UNNAMED	0.0
Anderson Ranch	UNNAMED	0.0
Anderson Ranch	Wagontown	0.0
Anderson Ranch	West Fork	0.0
Anderson Ranch	West Fork	0.0
Anderson Ranch	West Fork	0.0
Anderson Ranch	West Park	0.0
Anderson Ranch	West Park	0.0
Anderson Ranch	West Park	0.0
Anderson Ranch	West Park	0.0
Anderson Ranch	Whiskey Jack Cr	0.0
Anderson Ranch	Whiskey Jack Cr	0.0
Anderson Ranch	Whiskey Jack Cr	0.0
Anderson Ranch	Wide West Cr	0.0
Anderson Ranch	Wide West Cr	0.0
Anderson Ranch	Wide West Cr	0.0
Anderson Ranch	Wide West Cr	0.0
Anderson Ranch	Worswick	0.0
Anderson Ranch	Worswick	0.0
Anderson Ranch	Worswick	0.0
Anderson Ranch	South Fork Boise River	0.0
Arrowrock	Arrastra	0.0
Arrowrock	Ballentyn	1.7
Arrowrock	Ballentyn	13.2
Arrowrock	Ballentyn	23.5
Arrowrock	Ballentyn	49.3
Arrowrock	Ballentyn	146.1
Arrowrock	Banner Cr	0.0
Arrowrock	Banner Cr	0.0
Arrowrock	Bear Creek	0.0
Arrowrock	Bear Creek	0.0
Arrowrock	Bear Creek	0.0
Arrowrock	Bear Creek	0.0
Arrowrock	Bear Creek	0.0
Arrowrock	Bear Creek	1.6
Arrowrock	Bear Creek	2.4
Arrowrock	Bear Creek	2.8
Arrowrock	Bear Creek	4.5
Arrowrock	Bear Creek	6.7
Arrowrock	Bear Creek	8.2
Arrowrock	Bear Creek	8.9
Arrowrock	Bear Creek	11.4
Arrowrock	Bear River	0.0
Arrowrock	Bear River	0.0
Arrowrock	Bear River	0.0
Arrowrock	Bear River	0.0
Arrowrock	Bear River	0.9
Arrowrock	Bear River	1.0
Arrowrock	Bear River	1.5
Arrowrock	Bear River	1.9
Arrowrock	Bear River	3.1
Arrowrock	Bear River	3.8
Arrowrock	Bear River	4.7
Arrowrock	Bear River	6.6
Arrowrock	Bear River	38.7
Arrowrock	Bear River	179.9
Arrowrock	Beaver Cr	0.0
Arrowrock	Big Silver	0.0
Arrowrock	Big Silver	0.0
Arrowrock	Big Silver	22.6
Arrowrock	Blackwarrior	0.0
Arrowrock	Blackwarrior	0.0
Arrowrock	Camp Gulch	0.0
Arrowrock	Cow Creek	30.8
Arrowrock	Crooked R	0.0
Arrowrock	Crooked R	0.0
Arrowrock	Crooked R	0.0
Arrowrock	Crooked R	0.0
Arrowrock	Crooked R	0.0
Arrowrock	Crooked R	0.0
Arrowrock	Crooked R	0.0
Arrowrock	Crooked R	0.0
Arrowrock	Crooked R	4.0
Arrowrock	Crooked R	15.6
Arrowrock	Crooked R	22.4
Arrowrock	Crooked R	32.7
Arrowrock	Cub Creek	0.0
Arrowrock	Decker Cr	0.0
Arrowrock	East Fork	5.3
Arrowrock	East Fork	14.8
Arrowrock	Flint Cre	0.0
Arrowrock	Grouse Cr	0.0
Arrowrock	Grouse Cr	3.7
Arrowrock	Grouse Cr	5.1
Arrowrock	Horse Head Cr	0.0
Arrowrock	Hunter Cr	0.0
Arrowrock	Johnson C	0.0
Arrowrock	Johnson C	0.0
Arrowrock	Johnson C	0.0
Arrowrock	Johnson C	0.0
Arrowrock	Johnson C	0.0
Arrowrock	Johnson C	0.0
Arrowrock	Johnson C	0.9
Arrowrock	Johnson C	1.9
Arrowrock	Johnson C	2.5
Arrowrock	Johnson C	2.7
Arrowrock	Johnson C	3.0
Arrowrock	Johnson C	6.3
Arrowrock	Johnson C	7.7
Arrowrock	Johnson C	20.4
Arrowrock	Johnson C	29.3
Arrowrock	Little Si	24.7
Arrowrock	Lodgepole	76.6
Arrowrock	Lodgepole	91.2
Arrowrock	Lost Cree	0.0
Arrowrock	McLeod Cr	20.3
Arrowrock	McLeod Cr	77.2
Arrowrock	McPhearson Cr	79.7
Arrowrock	North Fork	0.0
Arrowrock	North Fork	0.6
Arrowrock	North Fork	1.0
Arrowrock	North Fork	4.5
Arrowrock	North Fork	6.3
Arrowrock	North Fork	11.9
Arrowrock	North Fork	12.0
Arrowrock	North Fork	19.3
Arrowrock	North Fork	24.2
Arrowrock	North Fork	28.1
Arrowrock	North Fork	30.8
Arrowrock	North Fork	72.3
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0

Appendix D. Continued.

Core area	Stream	BUT/100m
Arrowrock	Pikes Fork	0.0
Arrowrock	Pikes Fork	0.0
Arrowrock	Rattlesnake Cr	0.0
Arrowrock	Rattlesnake Cr	0.0
Arrowrock	Rattlesnake Cr	0.0
Arrowrock	Rattlesnake Cr	0.0
Arrowrock	Rattlesnake Cr	0.0
Arrowrock	Rattlesnake Cr	0.7
Arrowrock	Rattlesnake Cr	0.7
Arrowrock	Rockey Cr	0.0
Arrowrock	Sawmill Cr	0.0
Arrowrock	Sawmill Cr	0.0
Arrowrock	Sheep Cr	0.0
Arrowrock	Sheep Cr	0.0
Arrowrock	Sheep Cr	0.0
Arrowrock	Sheep Cr	3.4
Arrowrock	Slater Cr	0.0
Arrowrock	Smith Cr	0.0
Arrowrock	Trail Cr	0.0
Arrowrock	Trail Cr	0.0
Arrowrock	Trapper Cr	0.0
Arrowrock	UNNAMED	0.0
Arrowrock	UNNAMED	1.4
Arrowrock	UNNAMED	4.2
Arrowrock	West Fork	14.7
Arrowrock	Willow Cr	0.0
Arrowrock	Wren Cr	0.0
Arrowrock	Bear Creek	0.0
Arrowrock	Bear Creek	0.0
Arrowrock	Roaring River	0.0
Arrowrock	North Fork Boise River	0.0
Arrowrock	North Fork Boise River	0.0
Arrowrock	North Fork Boise River	0.0
Arrowrock	North Fork Boise River	0.0
Arrowrock	North Fork Boise River	0.0
Arrowrock	North Fork Boise River	1.9
Arrowrock	North Fork Boise River	0.0
Arrowrock	North Fork Boise River	0.0
Arrowrock	North Fork Boise River	0.0
Arrowrock	North Fork Boise River	0.0
Arrowrock	North Fork Boise River	0.0
Arrowrock	Middle Fork Boise River	0.0
Arrowrock	Middle Fork Boise River	0.0
Arrowrock	Middle Fork Boise River	0.0
Arrowrock	Middle Fork Boise River	0.0
Arrowrock	Middle Fork Boise River	0.0
Arrowrock	Middle Fork Boise River	6.2
Arrowrock	Middle Fork Boise River	10.0
Arrowrock	Middle Fork Boise River	1.6
Arrowrock	Leggit Creek	0.0
Arrowrock	EF Swanholm Creek	0.0
Arrowrock	Deadman Creek	0.0
Arrowrock	Rabbit Creek	0.0
Arrowrock	South Fork Rabbit Creek	0.0
Arrowrock	Phifer Creek	0.0
Arrowrock	Swanholm Creek	0.0
Arrowrock	Pete Creek	0.0
Arrowrock	Middle Fork Boise River	0.0
Arrowrock	Middle Fork Boise River	0.0
Arrowrock	Cottonwood Creek	0.0
Coeur d'Alene River	Medicine	17.6
Coeur d'Alene River	Medicine	23.9
Coeur d'Alene River	St. Joe R	0.0
Coeur d'Alene River	St. Joe R	4.2
Coeur d'Alene River	Wisdom Cr	13.3
Coeur d'Alene River	Wisdom Cr	13.5
Deadwood River	Basin Cr	0.0
Deadwood River	Daisy Cr	7.8
Deadwood River	Deadwood River	0.0
Deadwood River	Deadwood River	0.0
Deadwood River	Deadwood River	0.0
Deadwood River	Deadwood River	0.0
Deadwood River	Deadwood River	0.0
Deadwood River	Deadwood River	0.5
Deadwood River	Deadwood River	0.5
Deadwood River	Deadwood River	0.5
Deadwood River	Deadwood River	0.5
Deadwood River	Deadwood River	10.0

Core area	Stream	BUT/100m
Deadwood River	Deadwood River	17.0
Deadwood River	Deadwood River	40.0
Deadwood River	Deer Cr	0.0
Deadwood River	Deer Cr	0.0
Deadwood River	Deer Cr	0.0
Deadwood River	Deer Cr	0.0
Deadwood River	Deer Cr	0.0
Deadwood River	Deer Cr	0.7
Deadwood River	Deer Cr	10.0
Deadwood River	Goat Cr	1.1
Deadwood River	Habit Cre	0.0
Deadwood River	Moulding Cr	0.0
Deadwood River	North Fork	1.2
Deadwood River	South Fork	0.0
Deadwood River	South Fork	4.0
Deadwood River	Stratton	0.9
Deadwood River	Trail Cr	0.0
Deadwood River	Trail Cr	3.0
Deadwood River	Trail Cr	3.2
Deadwood River	Trail Cr	4.0
Deadwood River	UNNAMED	0.0
Deadwood River	UNNAMED	0.0
Deadwood River	UNNAMED	4.9
Deadwood River	Wild Buck	0.0
Deadwood River	Wild Buck	0.0
Granite Creek	Granite Creek	0.0
Granite Creek	Granite Creek	0.0
Kootenai River	Boulder C	0.0
Kootenai River	Caboose C	0.0
Kootenai River	Caboose C	4.1
Kootenai River	Curley Cr	0.0
Kootenai River	Curley Cr	1.0
Kootenai River	Debt Cr.	0.0
Kootenai River	Debt Cr.	0.0
Kootenai River	Debt Cr.	0.0
Kootenai River	Debt Cr.	1.5
Kootenai River	N. Callahan Cr	29.1
Kootenai River	N. Callahan Cr	46.0
Kootenai River	S. Callahan Cr	32.7
Kootenai River	S. Callahan Cr	34.0
Lake Pend Orielle	Chicopee Cr	0.0
Lake Pend Orielle	East Fork	1.0
Lake Pend Orielle	East Fork	9.0
Lake Pend Orielle	East Fork	15.0
Lake Pend Orielle	Gold Cr	78.0
Lake Pend Orielle	Gold Cr	89.0
Lake Pend Orielle	Granite Creek	16.0
Lake Pend Orielle	Granite Creek	62.0
Lake Pend Orielle	Granite Creek	65.0
Lake Pend Orielle	Keokee Cr	0.0
Lake Pend Orielle	Rattle Cr	36.0
Lake Pend Orielle	Rattle Cr	68.0
Lake Pend Orielle	Tarlac Cr	0.0
Lake Pend Orielle	Trestle Cr	5.0
Lake Pend Orielle	Trestle Cr	15.0
Lake Pend Orielle	Trestle Cr	62.0
Lake Pend Orielle	Twin Cr	0.0
Lake Pend Orielle	Twin Cr	0.0
Lake Pend Orielle	Twin Cr	1.0
Lake Pend Orielle	Twin Cr	2.0
Lake Pend Orielle	Twin Cr	3.0
Lake Pend Orielle	Twin Cr	4.0
Lake Pend Orielle	Twin Cr	5.0
Lake Pend Orielle	Uleda Cr	36.4
Lemhi River	Agency Cr	1.0
Lemhi River	Basin Cr	0.0
Lemhi River	Basin Cr	0.0
Lemhi River	Basin Cr	0.0
Lemhi River	Bear Valley Cr	4.8
Lemhi River	Bear Valley Cr	12.5
Lemhi River	Bear Valley Cr	15.8
Lemhi River	Bear Valley Cr	47.4
Lemhi River	Big Eight	0.0
Lemhi River	Big Eight	0.0
Lemhi River	Big Eight	2.0
Lemhi River	Big Eight	3.0
Lemhi River	Big Eight	17.0
Lemhi River	Big Eight	19.0
Lemhi River	Big Eight	34.0

Core area	Stream	BUT/100m
Lemhi River	Big Eight	58.0
Lemhi River	Big Springs Cr	0.0
Lemhi River	Big Springs Cr	0.0
Lemhi River	Big Springs Cr	1.7
Lemhi River	Big Timber Cr	0.0
Lemhi River	Big Timber Cr	0.0
Lemhi River	Big Timber Cr	0.0
Lemhi River	Big Timber Cr	0.0
Lemhi River	Big Timber Cr	1.0
Lemhi River	Big Timber Cr	1.0
Lemhi River	Big Timber Cr	2.0
Lemhi River	Big Timber Cr	9.9
Lemhi River	Big Timber Cr	12.0
Lemhi River	Big Timber Cr	14.0
Lemhi River	Big Timber Cr	21.0
Lemhi River	Big Timber Cr	29.0
Lemhi River	Bohannon Cr	0.0
Lemhi River	Bohannon Cr	0.0
Lemhi River	Bohannon Cr	0.0
Lemhi River	Bohannon Cr	0.0
Lemhi River	Bohannon Cr	0.0
Lemhi River	Bohannon Cr	0.0
Lemhi River	Bohannon Cr	0.0
Lemhi River	Bohannon Cr	0.0
Lemhi River	Bohannon Cr	0.0
Lemhi River	Bohannon Cr	1.8
Lemhi River	Bohannon Cr	2.6
Lemhi River	Bohannon Cr	11.0
Lemhi River	Bohannon Cr	46.9
Lemhi River	Cabin Cr	28.0
Lemhi River	Canyon Cr	0.0
Lemhi River	Canyon Cr	0.0
Lemhi River	Climb Creek	2.0
Lemhi River	Cooper	52.1
Lemhi River	Dairy Cr	0.0
Lemhi River	Dairy Cr	19.0
Lemhi River	East Fork	0.0
Lemhi River	East Fork	1.0
Lemhi River	East Fork	10.0
Lemhi River	Eighteenmile Cr	0.0
Lemhi River	Everson	4.1
Lemhi River	Falls Cr	28.0
Lemhi River	Geertson	21.2
Lemhi River	Geertson	47.3
Lemhi River	Hawley Cr	1.0
Lemhi River	Hawley Cr	0.0
Lemhi River	Hayden Creek	1.0
Lemhi River	Hayden Creek	18.0
Lemhi River	Haynes Cr	0.0
Lemhi River	Haynes Cr	0.0
Lemhi River	Haynes Cr	0.0
Lemhi River	Haynes Cr	0.0
Lemhi River	Kenney Cr	6.3
Lemhi River	Kenney Cr	0.0
Lemhi River	Kenney Cr	0.0
Lemhi River	Kenney Cr	0.0
Lemhi River	Kenney Cr	1.0
Lemhi River	Kenney Cr	2.0
Lemhi River	Kenney Cr	16.0
Lemhi River	Kenney Cr	18.0
Lemhi River	Kenney Cr	29.0
Lemhi River	Lemhi River	8.0
Lemhi River	Lemhi River	2.7
Lemhi River	Lemhi River	0.0
Lemhi River	Lemhi River	0.0
Lemhi River	Lemhi River	0.0
Lemhi River	Lemhi River	0.0
Lemhi River	Lemhi River	0.0
Lemhi River	Lemhi River	1.1
Lemhi River	Little Timber	0.0
Lemhi River	McDevitt	0.0
Lemhi River	Middle Fork	0.0
Lemhi River	Middle Fork	22.0
Lemhi River	Middle Fork	33.0
Lemhi River	Middle Fork	49.0
Lemhi River	North Fork	0.0
Lemhi River	North Fork	0.0

Appendix D. Continued.

Core area	Stream	BUT/100m
Lemhi River	North Fork	0.0
Lemhi River	North Fork	15.4
Lemhi River	Pass Creek	2.0
Lemhi River	Prospect Creek	9.0
Lemhi River	Rocky Creek	37.1
Lemhi River	Sandy Crek	0.0
Lemhi River	Slate Creek	0.0
Lemhi River	Slate Creek	1.8
Lemhi River	South Fork	2.9
Lemhi River	Spider Cr	15.2
Lemhi River	Squaw Cr	0.0
Lemhi River	Squaw Cr	0.0
Lemhi River	Squirrel Cr	17.0
Lemhi River	Stroud Cr	4.2
Lemhi River	Stroud Cr	14.0
Lemhi River	Thompson Cr	0.0
Lemhi River	Thompson Cr	0.0
Lemhi River	Trail Cr	1.0
Lemhi River	Trail Cr	2.0
Lemhi River	Trail Cr	3.4
Lemhi River	Trail Cr	16.0
Lemhi River	West Fork	0.0
Lemhi River	Wimpey Cr	0.0
Lemhi River	Wimpey Cr	0.0
Lemhi River	Wimpey Cr	0.0
Lemhi River	Wimpey Cr	0.0
Lemhi River	Wimpey Cr	0.0
Lemhi River	Wimpey Cr	0.0
Lemhi River	Wimpey Cr	0.0
Lemhi River	Wimpey Cr	0.0
Lemhi River	Wimpey Cr	0.0
Lemhi River	Wimpey Cr	0.0
Little Lost River	Badger Cr	0.0
Little Lost River	Badger Cr	0.9
Little Lost River	Badger Cr	2.1
Little Lost River	Badger Cr	13.9
Little Lost River	Bear Cr	0.0
Little Lost River	Big Creek	0.0
Little Lost River	Big Creek	0.0
Little Lost River	Big Creek	1.0
Little Lost River	Big Spring Cr	0.0
Little Lost River	Deer Creek	0.0
Little Lost River	Deer Creek	0.0
Little Lost River	Fallert Spring Cr	0.0
Little Lost River	Firebox Cr	48.1
Little Lost River	Firebox Cr	79.3
Little Lost River	Horse Cr	0.0
Little Lost River	Iron Cr	19.7
Little Lost River	Jackson Cr	1.2
Little Lost River	Little Lost River	0.0
Little Lost River	Little Lost River	0.9
Little Lost River	Little Lost River	1.2
Little Lost River	Little Lost River	1.8
Little Lost River	Little Lost River	1.8
Little Lost River	Little Lost River	1.8
Little Lost River	Little Lost River	2.0
Little Lost River	Little Lost River	3.2
Little Lost River	Little Lost River	19.0
Little Lost River	Little Lost River	37.3
Little Lost River	Little Lost River	0.0
Little Lost River	Little Lost River	5.9
Little Lost River	Little Lost River	9.0
Little Lost River	Little Lost River	12.0
Little Lost River	Little Lost River	16.4
Little Lost River	Little Lost River	30.4
Little Lost River	Little Lost River	134.6
Little Lost River	Little Lost River	273.7
Little Lost River	Mill Cr	3.4
Little Lost River	Mill Cr	2.0
Little Lost River	Mill Cr	56.1
Little Lost River	Smithie Fork Creek	64.3
Little Lost River	Smithie Fork Creek	84.7
Little Lost River	Squaw Cr	5.3
Little Lost River	Squaw Cr	0.0
Little Lost River	Squaw Cr	0.0
Little Lost River	Squaw Cr	3.0
Little Lost River	Squaw Cr	9.7
Little Lost River	Squaw Cr	16.8
Little Lost River	Squaw Cr	18.2
Little Lost River	Summit Cr	0.0
Little Lost River	Summit Cr	0.0
Little Lost River	Summit Cr	0.0
Little Lost River	Timber Cr	20.7
Little Lost River	Timber Cr	14.2
Little Lost River	Timber Cr	30.8
Little Lost River	Timber Cr	71.5
Little Lost River	UNNAMED	0.0
Little Lost River	Warm Cr	15.1
Little Lost River	Wet Creek	0.0
Little Lost River	Wet Creek	0.7
Little Lost River	Wet Creek	42.6
Little Lost River	Wet Creek	0.0
Little Lost River	Wet Creek	0.9
Little Lost River	Wet Creek	0.9
Little Lost River	Wet Creek	1.6
Little Lost River	Wet Creek	5.2
Little Lost River	Williams Cr	11.4
Little-Lower Salmon R	Boulder Creek	0.0
Little-Lower Salmon R	Boulder Creek	0.8
Little-Lower Salmon R	Boulder Creek	2.0
Little-Lower Salmon R	Boulder Creek	8.2
Little-Lower Salmon R	Hazard Creek	0.0
Little-Lower Salmon R	Hazard Creek	0.0
Little-Lower Salmon R	John Day Creek	0.0
Little-Lower Salmon R	John Day Creek	0.0
Little-Lower Salmon R	Little Salmon River	0.0
Little-Lower Salmon R	Little Salmon River	0.0
Little-Lower Salmon R	Little Salmon River	0.0
Little-Lower Salmon R	Little Slate Creek	3.0
Little-Lower Salmon R	Little Slate Creek	3.4
Little-Lower Salmon R	Race Creek	0.0
Little-Lower Salmon R	Rapid River	0.0
Little-Lower Salmon R	Rapid River	0.0
Little-Lower Salmon R	Rapid River	0.0
Little-Lower Salmon R	Rapid River	0.0
Little-Lower Salmon R	Rapid River	2.4
Little-Lower Salmon R	Rapid River	2.6
Little-Lower Salmon R	Rapid River	3.9
Little-Lower Salmon R	Rapid River	4.7
Little-Lower Salmon R	Rapid River	5.0
Little-Lower Salmon R	Rapid River	7.1
Little-Lower Salmon R	Rapid River	8.0
Little-Lower Salmon R	Rapid River	32.9
Little-Lower Salmon R	SF White Bird Creek	0.0
Little-Lower Salmon R	SF White Bird Creek	0.0
Little-Lower Salmon R	Skookumchuck Cr	0.0
Little-Lower Salmon R	Skookumchuck Cr	0.0
Little-Lower Salmon R	Slate Creek	0.0
Little-Lower Salmon R	Slate Creek	0.0
Little-Lower Salmon R	Slate Creek	0.0
Little-Lower Salmon R	Slate Creek	0.0
Little-Lower Salmon R	Slate Creek	0.0
Little-Lower Salmon R	Slate Creek	4.4
Little-Lower Salmon R	WF Rapid River	3.0
Little-Lower Salmon R	White Bird Creek	0.0
Lochsa River	Brushy Fork	1.9
Lochsa River	Brushy Fork	6.7
Lochsa River	Colt Creek	0.0
Lochsa River	Crooked Fork Lochsa R	0.0
Lochsa River	Crooked Fork Lochsa R	0.0
Lochsa River	Crooked Fork Lochsa R	0.0
Lochsa River	Crooked Fork Lochsa R	0.0
Lochsa River	Crooked Fork Lochsa R	0.0
Lochsa River	Crooked Fork Lochsa R	0.6
Lochsa River	Crooked Fork Lochsa R	3.6
Lochsa River	Crooked Fork Lochsa R	4.3
Lochsa River	Fire Creek	0.0
Lochsa River	Fire Creek	0.0
Lochsa River	Fish Creek	0.0
Lochsa River	Fish Creek	0.0
Lochsa River	Hopeful Creek	1.3
Lochsa River	Lochsa River	0.0
Lochsa River	Lochsa River	0.0
Lochsa River	Lochsa River	0.0
Lochsa River	Lochsa River	0.0
Lochsa River	Old Man Creek	0.0
Lochsa River	Papoose Creek	0.0
Lochsa River	Papoose Creek	0.0
Lochsa River	Papoose Creek	0.0
Lochsa River	Papoose Creek	0.0
Lochsa River	Papoose Creek	1.7
Lochsa River	Pete King Creek	0.0
Lochsa River	Pete King Creek	0.0
Lochsa River	Pete King Creek	0.0
Lochsa River	Pete King Creek	0.0
Lochsa River	Pete King Creek	0.0
Lochsa River	Postoffice Creek	0.0
Lochsa River	Postoffice Creek	2.0
Lochsa River	Split Creek	0.0
Lochsa River	Split Creek	0.0
Lochsa River	Spruce Creek	10.8
Lochsa River	Squaw Creek	0.0
Lochsa River	Squaw Creek	0.0
Lochsa River	Squaw Creek	0.0
Lochsa River	Squaw Creek	3.8
Lochsa River	Squaw Creek	6.5
Lochsa River	Squaw Creek	7.0
Lochsa River	Squaw Creek	7.3
Lochsa River	Squaw Creek	9.0
Lochsa River	Squaw Creek	9.1
Lochsa River	Squaw Creek	20.3
Lochsa River	Squaw Creek	35.9
Lochsa River	Warm Springs Cr	0.0
Lochsa River	White Sands Cr	0.0
Lochsa River	White Sands Cr	0.0
Lochsa River	White Sands Cr	0.0
Lower and MF Clearwater R	Big Canyon Creek	0.0
Lower and MF Clearwater R	Big Canyon Creek	0.0
Lower and MFClearwater R	Clear Creek	0.0
Lower and MFClearwater R	Clear Creek	0.0
Lower and MFClearwater R	Clear Creek	0.0
Lower and MFClearwater R	Clear Creek	0.0
Lower and MFClearwater R	Clear Creek	0.0
Lower and MFClearwater R	Dollar Creek	0.0
Lower and MFClearwater R	EF Potlatch River	0.0
Lower and MFClearwater R	EF Potlatch River	0.0
Lower and MFClearwater R	EF Potlatch River	0.0
Lower and MFClearwater R	EF Potlatch River	0.0
Lower and MFClearwater R	EF Potlatch River	0.0
Lower and MFClearwater R	EF Potlatch River	0.0
Lower and MFClearwater R	EF Potlatch River	0.0
Lower and MFClearwater R	EF Potlatch River	0.0
Lower and MFClearwater R	EF Potlatch River	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Eldorado Creek	0.0
Lower and MFClearwater R	Fivemile Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Lolo Creek	0.0
Lower and MFClearwater R	Mission Creek	0.0

Appendix D. Continued.

Core area	Stream	BUT/100m
Lower and MFClearwater R	Mission Creek	0.0
Lower and MFClearwater R	Potlatch River	0.0
Lower and MFClearwater R	Potlatch River	0.0
Lower and MFClearwater R	Potlatch River	0.0
Lower and MFClearwater R	SF Clear Creek	0.0
Lucky Peak	Bad Bear	0.0
Lucky Peak	Mores Cre	0.0
Lucky Peak	Mores Cre	0.0
Lucky Peak	Mores Cre	0.0
Lucky Peak	Mores Cre	4.7
Lucky Peak	Tenmile C	0.0
Lucky Peak	UNNAMED	0.0
Lucky Peak	Bannock Creek	0.0
Lucky Peak	UNNAMED	0.0
Lucky Peak	Fall Creek	0.0
Lucky Peak	West Fork Granite Creek	0.0
Lucky Peak	North Fork Macks Creek	0.0
Lucky Peak	Elk Creek	0.0
Lucky Peak	Elk Creek	0.0
Lucky Peak	Grimes Creek	0.0
Lucky Peak	Grimes Creek	0.0
Lucky Peak	Mores Creek	0.0
Lucky Peak	Mores Creek	0.0
Lucky Peak	Robie Creek	0.0
Lucky Peak	Grimes Creek	0.0
Lucky Peak	Mores Creek	0.0
Lucky Peak	Mores Creek	0.0
Lucky Peak	Grimes Creek	0.0
Lucky Peak	Grimes Creek	0.0
Lucky Peak	Grimes Creek	0.0
Lucky Peak	Grimes Creek	0.0
Lucky Peak	Mores Creek	0.0
Mid. Salmon R-Chamberlain	Bargamin Creek	0.0
Mid. Salmon R-Chamberlain	Bargamin Creek	4.3
Mid. Salmon R-Chamberlain	Big Mallard Creek	0.0
Mid. Salmon R-Chamberlain	Big Mallard Creek	4.2
Mid. Salmon R-Chamberlain	Chamberlain Creek	1.2
Mid. Salmon R-Chamberlain	Chamberlain Creek	4.9
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	0.0
Mid. Salmon R-Chamberlain	Crooked Creek	1.3
Mid. Salmon R-Chamberlain	Crooked Creek	1.8
Mid. Salmon R-Chamberlain	Fawn Cree	0.0
Mid. Salmon R-Chamberlain	Fish Creek	0.0
Mid. Salmon R-Chamberlain	Jersey Creek	0.0
Mid. Salmon R-Chamberlain	Jumbo Cre	0.0
Mid. Salmon R-Chamberlain	Sheep Creek	0.0
Mid. Salmon R-Chamberlain	Sheep Creek	3.1
Mid. Salmon R-Chamberlain	Silver Sp	0.0
Mid. Salmon R-Chamberlain	WF Chamberlain Cr	2.4
Mid. Salmon R-Chamberlain	WF Chamberlain Cr	4.6
Mid. Salmon R-Panther	Anderson	0.0
Mid. Salmon R-Panther	Bear Basin	0.0
Mid. Salmon R-Panther	Beaver	1.0
Mid. Salmon R-Panther	Big Deer	0.0
Mid. Salmon R-Panther	Big Hat Cr	0.0
Mid. Salmon R-Panther	Boulder	1.0
Mid. Salmon R-Panther	Boulder	9.0
Mid. Salmon R-Panther	Boulder	15.7
Mid. Salmon R-Panther	Boulder C	6.0
Mid. Salmon R-Panther	Cabin Creek	0.0
Mid. Salmon R-Panther	Camp	7.0
Mid. Salmon R-Panther	Carmen	36.0
Mid. Salmon R-Panther	Carmen	84.0
Mid. Salmon R-Panther	Carmen Cr	0.0
Mid. Salmon R-Panther	Colson Cr	0.0
Mid. Salmon R-Panther	Colson Cr	0.0
Mid. Salmon R-Panther	Colson Cr	0.0
Mid. Salmon R-Panther	Corn Cree	0.0
Mid. Salmon R-Panther	Dahlonega	0.0
Mid. Salmon R-Panther	Deep Cr	0.0
Mid. Salmon R-Panther	Ditch Cr	0.0
Mid. Salmon R-Panther	Dump Cr	0.0
Mid. Salmon R-Panther	Dump Cr	0.0
Mid. Salmon R-Panther	East Fork	0.0
Mid. Salmon R-Panther	East Fork	0.0
Mid. Salmon R-Panther	East Fork	0.0
Mid. Salmon R-Panther	Fourth of July Cr	19.0
Mid. Salmon R-Panther	Freeman Cr	0.0
Mid. Salmon R-Panther	Hammerean Cr	0.0
Mid. Salmon R-Panther	Hammerean Cr	0.0
Mid. Salmon R-Panther	Hammerean Cr	0.0
Mid. Salmon R-Panther	Hat Creek	0.0
Mid. Salmon R-Panther	Horse Creek	4.7
Mid. Salmon R-Panther	Horse Creek	8.1
Mid. Salmon R-Panther	Horse Creek	16.5
Mid. Salmon R-Panther	Horse Creek	18.0
Mid. Salmon R-Panther	Horse Creek	19.0
Mid. Salmon R-Panther	Horse Creek	20.9
Mid. Salmon R-Panther	Horse Creek	23.0
Mid. Salmon R-Panther	Horse Creek	36.0
Mid. Salmon R-Panther	Horse Creek	3.0
Mid. Salmon R-Panther	Horse Creek	7.0
Mid. Salmon R-Panther	Horse Creek	9.0
Mid. Salmon R-Panther	Horse Creek	0.0
Mid. Salmon R-Panther	Horse Creek	2.2
Mid. Salmon R-Panther	Hot Springs Cr	0.0
Mid. Salmon R-Panther	Hot Springs Cr	0.0
Mid. Salmon R-Panther	Hot Springs Cr	0.0
Mid. Salmon R-Panther	Hughes Cr	6.7
Mid. Salmon R-Panther	Hughes Cr	0.0
Mid. Salmon R-Panther	Indian Cr	17.8
Mid. Salmon R-Panther	Indian Cr	0.0
Mid. Salmon R-Panther	Indian WF	6.0
Mid. Salmon R-Panther	Iron Creek	9.0
Mid. Salmon R-Panther	Iron Creek	0.0
Mid. Salmon R-Panther	NF Iron Creek	3.0
Mid. Salmon R-Panther	NF Iron Creek	4.0
Mid. Salmon R-Panther	NF Iron Creek	1.0
Mid. Salmon R-Panther	Little Hat Cr	0.0
Mid. Salmon R-Panther	Little Hat Cr	0.0
Mid. Salmon R-Panther	Little Sh	0.0
Mid. Salmon R-Panther	McKim Cr	2.0
Mid. Salmon R-Panther	Middle Fork	20.0
Mid. Salmon R-Panther	Mink Cr	1.0
Mid. Salmon R-Panther	Moccasin CR	0.0
Mid. Salmon R-Panther	Moose Cr	4.3
Mid. Salmon R-Panther	Moose Cr	0.0
Mid. Salmon R-Panther	Moose Cr	0.0
Mid. Salmon R-Panther	Moose Cr	12.0
Mid. Salmon R-Panther	Moyer Creek	0.0
Mid. Salmon R-Panther	Moyer Creek	6.6
Mid. Salmon R-Panther	Moyer Creek	23.5
Mid. Salmon R-Panther	Moyer SFK	4.0
Mid. Salmon R-Panther	Napias Creek	0.0
Mid. Salmon R-Panther	Nez Perce	0.0
Mid. Salmon R-Panther	NF Salmon River	0.7
Mid. Salmon R-Panther	NF Salmon River	2.6
Mid. Salmon R-Panther	North Fork	0.0
Mid. Salmon R-Panther	North Fork	17.0
Mid. Salmon R-Panther	Otter Cr	2.4
Mid. Salmon R-Panther	Otter Cr	7.0
Mid. Salmon R-Panther	Owl Creek	0.0
Mid. Salmon R-Panther	Owl Creek	1.0
Mid. Salmon R-Panther	Panther Creek	2.0
Mid. Salmon R-Panther	Panther Creek	0.0
Mid. Salmon R-Panther	Panther Creek	0.0
Mid. Salmon R-Panther	Panther Creek	0.0
Mid. Salmon R-Panther	Panther Creek	0.0
Mid. Salmon R-Panther	Panther Creek	0.0
Mid. Salmon R-Panther	Panther Creek	0.0
Mid. Salmon R-Panther	Panther Creek	0.0
Mid. Salmon R-Panther	Panther Creek	0.0
Mid. Salmon R-Panther	Panther Creek	3.1
Mid. Salmon R-Panther	Panther Creek	5.5
Mid. Salmon R-Panther	Pierce Cr	1.0
Mid. Salmon R-Panther	Pierce Cr	0.0
Mid. Salmon R-Panther	Pierce Cr	0.0
Mid. Salmon R-Panther	Pine Creek	1.0
Mid. Salmon R-Panther	Pine Creek	6.3
Mid. Salmon R-Panther	Pine Creek	6.9
Mid. Salmon R-Panther	Pine Creek	11.0
Mid. Salmon R-Panther	Pine Creek	0.0
Mid. Salmon R-Panther	Pine Creek	0.0
Mid. Salmon R-Panther	Pine Creek	1.0
Mid. Salmon R-Panther	Pine Creek	6.0
Mid. Salmon R-Panther	Pine Creek	0.0
Mid. Salmon R-Panther	Pine Creek	0.0
Mid. Salmon R-Panther	Porphyry Creek	3.8
Mid. Salmon R-Panther	Porphyry Creek	4.3
Mid. Salmon R-Panther	Porphyry Creek	6.0
Mid. Salmon R-Panther	Sage Creek	0.0
Mid. Salmon R-Panther	Salmon WF	1.0
Mid. Salmon R-Panther	Salmon WF	2.2
Mid. Salmon R-Panther	Salt Cr	5.0
Mid. Salmon R-Panther	Salzer Cr	0.0
Mid. Salmon R-Panther	Sharkey Cr	1.0
Mid. Salmon R-Panther	Sheep Cr	1.9
Mid. Salmon R-Panther	Sheep Cr	35.0
Mid. Salmon R-Panther	Sheep Cr	0.0
Mid. Salmon R-Panther	Sheep Cr	2.0
Mid. Salmon R-Panther	Sheep NFK	9.8
Mid. Salmon R-Panther	Sheep NFK	10.0
Mid. Salmon R-Panther	Sheep SFK	19.0
Mid. Salmon R-Panther	Smithy Cr	0.0
Mid. Salmon R-Panther	Smithy Cr	0.0
Mid. Salmon R-Panther	South Fork	0.0
Mid. Salmon R-Panther	Spring Cr	2.9
Mid. Salmon R-Panther	Spring Cr	0.0
Mid. Salmon R-Panther	Spring Cr	0.0
Mid. Salmon R-Panther	Spring Cr	0.0
Mid. Salmon R-Panther	Squaw Cr	5.0
Mid. Salmon R-Panther	Squaw Cr	6.3
Mid. Salmon R-Panther	Squaw Cr	6.7
Mid. Salmon R-Panther	Squaw Cr	8.0
Mid. Salmon R-Panther	Squaw Cr	11.0
Mid. Salmon R-Panther	Squaw Cr	0.0
Mid. Salmon R-Panther	Squaw Cr	1.0
Mid. Salmon R-Panther	Squaw Cr	5.0
Mid. Salmon R-Panther	Squaw Cr	7.0
Mid. Salmon R-Panther	Threemile Cr	0.0
Mid. Salmon R-Panther	Threemile Cr	0.0
Mid. Salmon R-Panther	Threemile Cr	0.0
Mid. Salmon R-Panther	Tower Cr	0.0
Mid. Salmon R-Panther	Twin Cr	1.0
Mid. Salmon R-Panther	Twin Cr	28.6
Mid. Salmon R-Panther	Twin Cr	45.1
Mid. Salmon R-Panther	Twin Cr	45.8
Mid. Salmon R-Panther	Twin Cr	89.7
Mid. Salmon R-Panther	Twin Cr	24.0
Mid. Salmon R-Panther	Vine Cr	1.0
Mid. Salmon R-Panther	Vine Cr	0.0
Mid. Salmon R-Panther	Vine Cr	0.0
Mid. Salmon R-Panther	Wagonhamm Cr	0.0
Mid. Salmon R-Panther	Wagonhamm Cr	0.0
Mid. Salmon R-Panther	Wagonhamm Cr	0.0
Mid. Salmon R-Panther	Wagonhamm Cr	0.0
Mid. Salmon R-Panther	Wagonhamm Cr	0.0
Mid. Salmon R-Panther	Wagonhamm Cr	0.0
Mid. Salmon R-Panther	Wallace Cr	0.0
Mid. Salmon R-Panther	Wallace Cr	0.0
Mid. Salmon R-Panther	Weasel Cr	2.0
Mid. Salmon R-Panther	West Fork	0.0
Mid. Salmon R-Panther	West Fork	0.0
Mid. Salmon R-Panther	West Fork	0.0
Mid. Salmon R-Panther	Wheat Cr	0.0
Mid. Salmon R-Panther	Williams Cr	0.0
Mid. Salmon R-Panther	Woodtick Cr	3.0
Middle Fork Payette River	Anderson Creek	0.0
Middle Fork Payette River	Anderson Creek	0.0
Middle Fork Payette River	Anderson Creek	0.0

Appendix D. Continued.

Core area	Stream	BUT/100m
Middle Fork Payette River	Anderson Creek	0.0
Middle Fork Payette River	Anderson Creek	0.0
Middle Fork Payette River	Anderson Creek	0.0
Middle Fork Payette River	Anderson Creek	0.0
Middle Fork Payette River	Anderson Creek	0.0
Middle Fork Payette River	Anderson Creek	0.0
Middle Fork Payette River	Granite Creek	0.0
Middle Fork Payette River	Scriver Cr	0.0
Middle Fork Payette River	Scriver Cr	0.0
Middle Fork Payette River	Scriver Cr	0.0
Middle Fork Payette River	Scriver Cr	0.0
Middle Fork Payette River	Scriver Cr	0.0
Middle Fork Payette River	Scriver Cr	0.0
Middle Fork Payette River	Scriver Cr	0.0
Middle Fork Payette River	Scriver Cr	0.0
Middle Fork Payette River	Silver Cr	0.0
Middle Fork Payette River	Silver Cr	0.0
Middle Fork Payette River	Silver Cr	0.0
Middle Fork Payette River	Six Mile Cr	0.0
Middle Fork Payette River	Six Mile Cr	0.0
Middle Fork Payette River	Six Mile Cr	0.0
Middle Fork Payette River	Six Mile Cr	0.0
Middle Fork Payette River	Six Mile Cr	0.0
Middle Fork Payette River	Ucon Cr	0.0
Middle Fork Payette River	UNNAMED	0.0
Middle Fork Payette River	UNNAMED	0.0
Middle Fork Payette River	UNNAMED	0.0
Middle Fork Payette River	UNNAMED	0.0
Middle Fork Payette River	West Fork	0.0
Middle Fork Payette River	Bull Creek	6.0
Middle Fork Payette River	MF Payette River	10.0
Middle Fork Payette River	Bull Creek	18.6
Middle Fork Payette River	MF Payette River	0.0
Middle Fork Payette River	MF Payette River	0.0
Middle Fork Payette River	MF Payette River	0.0
Middle Fork Payette River	MF Payette River	0.0
Middle Fork Payette River	MF Payette River	0.0
Middle Fork Payette River	MF Payette River	0.0
Middle Fork Payette River	MF Payette River	0.0
Middle Fork Payette River	MF Payette River	0.0
Middle Fork Payette River	MF Payette River	0.0
Middle Fork Payette River	Bridge Creek	0.0
Middle Fork Payette River	MF Scriver Creek	0.0
Middle Fork Payette River	Long Fork Silver Creek	0.0
Middle Fork Payette River	Peace Creek	0.0
Middle Fork Payette River	Silver Creek	0.0
Middle Fork Payette River	Unnamed to Wet Foot Cr.	0.0
Middle Fork Payette River	Rattlesnake Creek	0.0
Middle Fork Payette River	Anderson Creek	0.0
Middle Fork Payette River	Silver Creek	0.0
Middle Fork Payette River	Lightning Creek	0.0
Middle Fork Salmon River	Alder Cr	3.2
Middle Fork Salmon River	Baldwin Cr	2.0
Middle Fork Salmon River	Bear Cr	8.0
Middle Fork Salmon River	Bear Valley Creek	0.0
Middle Fork Salmon River	Bear Valley Creek	0.0
Middle Fork Salmon River	Bear Valley Creek	0.0
Middle Fork Salmon River	Bear Valley Creek	0.0
Middle Fork Salmon River	Bear Valley Creek	0.0
Middle Fork Salmon River	Bear Valley Creek	0.0
Middle Fork Salmon River	Bear Valley Creek	1.2
Middle Fork Salmon River	Bear Valley Creek	1.4
Middle Fork Salmon River	Bearskin Cr	0.0
Middle Fork Salmon River	Bearskin Cr	2.9
Middle Fork Salmon River	Bearskin Cr	3.0
Middle Fork Salmon River	Bearskin Cr	3.8
Middle Fork Salmon River	Bearskin Cr	4.9
Middle Fork Salmon River	Bearskin Cr	5.8
Middle Fork Salmon River	Bearskin Cr	9.0
Middle Fork Salmon River	Beaver Creek	0.8
Middle Fork Salmon River	Beaver Creek	0.0
Middle Fork Salmon River	Beaver Creek	5.0
Middle Fork Salmon River	Big Creek	0.0
Middle Fork Salmon River	Big Creek	0.8
Middle Fork Salmon River	Big Creek	0.8
Middle Fork Salmon River	Big Creek	1.1
Middle Fork Salmon River	Big Creek	1.1
Middle Fork Salmon River	Big Creek	1.2
Middle Fork Salmon River	Big Creek	4.1
Middle Fork Salmon River	Blackeagle Cr	12.5
Middle Fork Salmon River	Cabin Cr	2.0
Middle Fork Salmon River	Cache Cr	0.3
Middle Fork Salmon River	Cache Cr	0.6
Middle Fork Salmon River	Camas Creek	0.9
Middle Fork Salmon River	Camas Creek	0.0
Middle Fork Salmon River	Camas Creek	0.0
Middle Fork Salmon River	Camas Creek	1.0
Middle Fork Salmon River	Camas Creek	3.3
Middle Fork Salmon River	Camas Creek	6.0
Middle Fork Salmon River	Camp Creek	1.8
Middle Fork Salmon River	Cape Horn	1.0
Middle Fork Salmon River	Cape Horn Creek	1.2
Middle Fork Salmon River	Cape Horn Creek	8.1
Middle Fork Salmon River	Casner Cr	0.0
Middle Fork Salmon River	Casner Cr	0.0
Middle Fork Salmon River	Casner Cr	1.0
Middle Fork Salmon River	Cold Creek	0.0
Middle Fork Salmon River	Cold Creek	0.0
Middle Fork Salmon River	Cold Creek	3.0
Middle Fork Salmon River	Cold Creek	3.5
Middle Fork Salmon River	Cold Creek	3.9
Middle Fork Salmon River	Cold Creek	6.0
Middle Fork Salmon River	Cook Creek	0.0
Middle Fork Salmon River	Cook Creek	0.0
Middle Fork Salmon River	Cook Creek	0.0
Middle Fork Salmon River	Cook Creek	0.0
Middle Fork Salmon River	Dagger Cr	3.7
Middle Fork Salmon River	Dagger Cr	4.0
Middle Fork Salmon River	Dagger Cr	5.0
Middle Fork Salmon River	East Fork	0.0
Middle Fork Salmon River	East Fork	0.0
Middle Fork Salmon River	East Fork	0.0
Middle Fork Salmon River	East Fork	0.7
Middle Fork Salmon River	Elk Creek	0.3
Middle Fork Salmon River	Elk Creek	0.4
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Elk Creek	0.0
Middle Fork Salmon River	Fir Creek	0.0
Middle Fork Salmon River	Fir Creek	0.0
Middle Fork Salmon River	Fir Creek	0.0
Middle Fork Salmon River	Fir Creek	0.0
Middle Fork Salmon River	Fir Creek	0.0
Middle Fork Salmon River	Fir Creek	0.0
Middle Fork Salmon River	Fir Creek	0.0
Middle Fork Salmon River	Fir Creek	0.9
Middle Fork Salmon River	Fir Creek	1.0
Middle Fork Salmon River	Fir Creek	1.0
Middle Fork Salmon River	Fir Creek	1.7
Middle Fork Salmon River	Flume Creek	0.0
Middle Fork Salmon River	Fly Creek	1.3
Middle Fork Salmon River	Hoodoo Cr	3.0
Middle Fork Salmon River	Hoodoo Cr	1.0
Middle Fork Salmon River	Hoodoo Cr	1.0
Middle Fork Salmon River	Hoodoo Cr	20.0
Middle Fork Salmon River	Indian Creek	0.0
Middle Fork Salmon River	Indian Creek	0.0
Middle Fork Salmon River	J Fell Cr	3.0
Middle Fork Salmon River	Knapp Creek	0.0
Middle Fork Salmon River	Knapp Creek	0.0
Middle Fork Salmon River	Knapp Creek	0.0
Middle Fork Salmon River	Knapp Creek	0.0
Middle Fork Salmon River	Knapp Creek	0.0
Middle Fork Salmon River	Knapp Creek	1.6
Middle Fork Salmon River	Lake Creek	4.0
Middle Fork Salmon River	Lake Creek	0.0
Middle Fork Salmon River	Lemhi River	0.0
Middle Fork Salmon River	Lemhi River	0.0
Middle Fork Salmon River	Liberty Cr	2.7
Middle Fork Salmon River	Little Bear Cr	0.9
Middle Fork Salmon River	Little Bear Cr	1.8
Middle Fork Salmon River	Little Ea	0.0
Middle Fork Salmon River	Little Ea	0.0
Middle Fork Salmon River	Little Wh	0.0
Middle Fork Salmon River	Littlejac	2.0
Middle Fork Salmon River	Lola	3.0
Middle Fork Salmon River	Loon Creek	0.0
Middle Fork Salmon River	Loon Creek	0.0
Middle Fork Salmon River	Loon Creek	0.0
Middle Fork Salmon River	Loon Creek	0.0
Middle Fork Salmon River	Loon Creek	0.0
Middle Fork Salmon River	Marble Creek	0.0
Middle Fork Salmon River	Marble Creek	0.0
Middle Fork Salmon River	Marble Creek	0.0
Middle Fork Salmon River	Marble Creek	3.4
Middle Fork Salmon River	Marble Creek	5.0
Middle Fork Salmon River	Marsh Creek	0.0
Middle Fork Salmon River	Marsh Creek	0.0
Middle Fork Salmon River	Marsh Creek	0.0
Middle Fork Salmon River	Marsh Creek	0.8
Middle Fork Salmon River	Marsh Creek	1.4
Middle Fork Salmon River	Martindal Cr	1.1
Middle Fork Salmon River	Meadow Cr	1.2
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	0.0
Middle Fork Salmon River	MF Salmon River	1.0
Middle Fork Salmon River	MF Salmon River	1.5
Middle Fork Salmon River	MF Salmon River	2.1
Middle Fork Salmon River	MF Salmon River	10.7
Middle Fork Salmon River	Monumental Cr	0.0
Middle Fork Salmon River	Monumental Cr	0.0
Middle Fork Salmon River	Monumental Cr	0.6
Middle Fork Salmon River	Monumental Cr	1.7
Middle Fork Salmon River	Mystery Cr	1.0
Middle Fork Salmon River	North Fork	0.0
Middle Fork Salmon River	North Fork	0.0
Middle Fork Salmon River	North Fork	0.0
Middle Fork Salmon River	North Fork	0.0
Middle Fork Salmon River	Pahsimeroi River	4.0
Middle Fork Salmon River	Pahsimeroi River	5.0
Middle Fork Salmon River	Pahsimeroi River	7.0
Middle Fork Salmon River	Panther Creek	32.0
Middle Fork Salmon River	Pistol Creek	0.0
Middle Fork Salmon River	Pistol Creek	0.0
Middle Fork Salmon River	Pole Cree	2.0
Middle Fork Salmon River	Porter Cr	0.0

Appendix D. Continued.

Core area	Stream	BUT/100m
Middle Fork Salmon River	Porter Cr	0.0
Middle Fork Salmon River	Rams Creek	0.0
Middle Fork Salmon River	Rock Creek	4.9
Middle Fork Salmon River	Rush Creek	0.0
Middle Fork Salmon River	Rush Creek	4.4
Middle Fork Salmon River	Sheep Cr	9.2
Middle Fork Salmon River	Shovel	5.0
Middle Fork Salmon River	Shovel Cr	17.9
Middle Fork Salmon River	Slate Cr	2.6
Middle Fork Salmon River	Sulphur Creek	0.0
Middle Fork Salmon River	Sulphur Creek	0.0
Middle Fork Salmon River	Sulphur Creek	0.0
Middle Fork Salmon River	Sulphur Creek	3.7
Middle Fork Salmon River	UNNAMED	0.0
Middle Fork Salmon River	UNNAMED	0.0
Middle Fork Salmon River	UNNAMED	0.0
Middle Fork Salmon River	UNNAMED	0.0
Middle Fork Salmon River	UNNAMED	0.0
Middle Fork Salmon River	UNNAMED	0.0
Middle Fork Salmon River	UNNAMED	0.0
Middle Fork Salmon River	UNNAMED	0.0
Middle Fork Salmon River	UNNAMED	0.0
Middle Fork Salmon River	UNNAMED	0.0
Middle Fork Salmon River	UNNAMED	0.4
Middle Fork Salmon River	UNNAMED	3.5
Middle Fork Salmon River	UNNAMED	5.5
Middle Fork Salmon River	UNNAMED	6.2
Middle Fork Salmon River	UNNAMED	7.0
Middle Fork Salmon River	UNNAMED	9.7
Middle Fork Salmon River	Vanity Cr	1.0
Middle Fork Salmon River	West Fork	0.0
Middle Fork Salmon River	West Fork	0.0
Middle Fork Salmon River	West Fork	0.0
Middle Fork Salmon River	West Fork	0.8
Middle Fork Salmon River	WF Monumental Cr	0.0
Middle Fork Salmon River	Wilson Creek	1.0
Middle Fork Salmon River	Wyoming Cr	9.0
Middle Fork Salmon River	Yellowjacket Cr	0.0
Middle Fork Salmon River	Yellowjacket Cr	3.0
NF Clearwater River	Beaver Cr	0.0
NF Clearwater River	Beaver Cr	0.0
NF Clearwater River	Beaver Cr	1.0
NF Clearwater River	Beaver Cr	2.0
NF Clearwater River	Beaver Cr	2.0
NF Clearwater River	Bostonia Cr	0.9
NF Clearwater River	Bostonia Cr	3.0
NF Clearwater River	Caledonia Cr	0.0
NF Clearwater River	Caledonia Cr	4.1
NF Clearwater River	Caledonia Cr	8.2
NF Clearwater River	Collins Cr	0.0
NF Clearwater River	Floodwood	0.0
NF Clearwater River	Floodwood	1.0
NF Clearwater River	Floodwood	1.0
NF Clearwater River	Floodwood	1.0
NF Clearwater River	Floodwood	2.1
NF Clearwater River	Foehl Cr	1.0
NF Clearwater River	French Cr	0.0
NF Clearwater River	French Cr	0.0
NF Clearwater River	French Cr	0.0
NF Clearwater River	Glover Cr	1.0
NF Clearwater River	Goose Cr	5.0
NF Clearwater River	Hemlock C	0.0
NF Clearwater River	Hemlock C	0.0
NF Clearwater River	Hemlock C	0.0
NF Clearwater River	Isabella	0.0
NF Clearwater River	Isabella	0.0
NF Clearwater River	Isabella	0.0
NF Clearwater River	Isabella	0.0
NF Clearwater River	Isabella	1.0
NF Clearwater River	Isabella	1.0
NF Clearwater River	Isabella	1.9
NF Clearwater River	Isabella	2.0
NF Clearwater River	Isabella	2.0
NF Clearwater River	Isabella	3.0
NF Clearwater River	Isabella	3.1
NF Clearwater River	Isabella	3.2
NF Clearwater River	Isabella	7.8
NF Clearwater River	Kelly Cr	0.0
NF Clearwater River	Kelly Cr	0.0
NF Clearwater River	Kelly Cr	0.0
NF Clearwater River	Kelly Cr	0.9
NF Clearwater River	Kelly Cr	0.0
NF Clearwater River	Kelly Cr	1.0
NF Clearwater River	Kelly Cr	1.0
NF Clearwater River	Kelly Cr	1.0
NF Clearwater River	Kelly Cr	1.1
NF Clearwater River	Kelly Cr	6.2
NF Clearwater River	Lake Cr	0.0
NF Clearwater River	Lake Cr	0.0
NF Clearwater River	Lake Cr	4.1
NF Clearwater River	Lake Cr	5.1
NF Clearwater River	Little Mo	0.0
NF Clearwater River	Little Mo	0.0
NF Clearwater River	Little Mo	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.8
NF Clearwater River	Little North Fork	0.8
NF Clearwater River	Little North Fork	0.9
NF Clearwater River	Little North Fork	0.9
NF Clearwater River	Little North Fork	1.0
NF Clearwater River	Little North Fork	1.0
NF Clearwater River	Little North Fork	1.3
NF Clearwater River	Little North Fork	1.3
NF Clearwater River	Little North Fork	1.9
NF Clearwater River	Little North Fork	1.9
NF Clearwater River	Little North Fork	2.2
NF Clearwater River	Little North Fork	2.2
NF Clearwater River	Little North Fork	2.7
NF Clearwater River	Little North Fork	2.8
NF Clearwater River	Little North Fork	2.9
NF Clearwater River	Little North Fork	3.0
NF Clearwater River	Little North Fork	3.0
NF Clearwater River	Little North Fork	3.5
NF Clearwater River	Little North Fork	3.5
NF Clearwater River	Little North Fork	3.6
NF Clearwater River	Little North Fork	3.8
NF Clearwater River	Little North Fork	3.8
NF Clearwater River	Little North Fork	4.0
NF Clearwater River	Little North Fork	4.0
NF Clearwater River	Little North Fork	4.3
NF Clearwater River	Little North Fork	4.6
NF Clearwater River	Little North Fork	4.9
NF Clearwater River	Little North Fork	5.0
NF Clearwater River	Little North Fork	5.1
NF Clearwater River	Little North Fork	6.6
NF Clearwater River	Little North Fork	6.9
NF Clearwater River	Little North Fork	12.8
NF Clearwater River	Little North Fork	13.1
NF Clearwater River	Little North Fork	27.3
NF Clearwater River	Little North Fork	48.5
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	0.0
NF Clearwater River	Little North Fork	1.0
NF Clearwater River	Little North Fork	1.0
NF Clearwater River	Little North Fork	1.3
NF Clearwater River	Little North Fork	1.9
NF Clearwater River	Little North Fork	2.0
NF Clearwater River	Little North Fork	2.0
NF Clearwater River	Little North Fork	2.0
NF Clearwater River	Little North Fork	2.0
NF Clearwater River	Little North Fork	2.0
NF Clearwater River	Little North Fork	2.0
NF Clearwater River	Little North Fork	2.0
NF Clearwater River	Little North Fork	2.0
NF Clearwater River	Little North Fork	2.2
NF Clearwater River	Little North Fork	3.0
NF Clearwater River	Little North Fork	3.0
NF Clearwater River	Little North Fork	3.0
NF Clearwater River	Little North Fork	3.1
NF Clearwater River	Little North Fork	3.8
NF Clearwater River	Little North Fork	3.8
NF Clearwater River	Little North Fork	4.2
NF Clearwater River	Little North Fork	5.0
NF Clearwater River	Little North Fork	5.1
NF Clearwater River	Little North Fork	6.0
NF Clearwater River	Little North Fork	6.0
NF Clearwater River	Little North Fork	7.0
NF Clearwater River	Long Cr	1.9
NF Clearwater River	Long Cr	2.0
NF Clearwater River	Long Cr	5.9
NF Clearwater River	Long Cr	6.7
NF Clearwater River	Long Cr	7.3
NF Clearwater River	Lost Cr	2.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.0
NF Clearwater River	Meadow Cr	0.9
NF Clearwater River	Meadow Cr	1.0
NF Clearwater River	Meadow Cr	1.0
NF Clearwater River	Meadow Cr	1.0

Appendix D. Continued.

Core area	Stream	BUT/100m
NF Clearwater River	Meadow Cr	1.4
NF Clearwater River	Meadow Cr	1.7
NF Clearwater River	Meadow Cr	1.9
NF Clearwater River	Meadow Cr	1.9
NF Clearwater River	Meadow Cr	1.9
NF Clearwater River	Meadow Cr	2.0
NF Clearwater River	Meadow Cr	2.0
NF Clearwater River	Meadow Cr	2.0
NF Clearwater River	Meadow Cr	2.1
NF Clearwater River	Meadow Cr	3.1
NF Clearwater River	Meadow Cr	4.4
NF Clearwater River	Meadow Cr	5.8
NF Clearwater River	Meadow Cr	7.3
NF Clearwater River	Moose Cr	0.0
NF Clearwater River	Moose Cr	0.0
NF Clearwater River	Moose Cr	0.0
NF Clearwater River	NF Black	0.0
NF Clearwater River	NF Black	1.0
NF Clearwater River	NF Black	1.0
NF Clearwater River	NF Black	2.0
NF Clearwater River	NF Black	4.0
NF Clearwater River	NF Black	4.0
NF Clearwater River	NF Black	6.5
NF Clearwater River	NF Clearwater	0.0
NF Clearwater River	NF Clearwater	0.0
NF Clearwater River	NF Clearwater	0.0
NF Clearwater River	NF Clearwater	0.0
NF Clearwater River	NF Clearwater	1.0
NF Clearwater River	NF Clearwater	1.0
NF Clearwater River	NF Clearwater	2.0
NF Clearwater River	NF Clearwater	2.0
NF Clearwater River	NF Clearwater	2.7
NF Clearwater River	NF Clearwater	3.0
NF Clearwater River	NF Clearwater	3.0
NF Clearwater River	NF Clearwater	3.0
NF Clearwater River	NF Clearwater	3.7
NF Clearwater River	NF Clearwater	3.8
NF Clearwater River	NF Clearwater	4.0
NF Clearwater River	NF Clearwater	4.0
NF Clearwater River	NF Clearwater	4.9
NF Clearwater River	NF Clearwater	7.9
NF Clearwater River	Orogrande	0.0
NF Clearwater River	Orogrande	0.0
NF Clearwater River	Orogrande	0.0
NF Clearwater River	Placer Cr	3.7
NF Clearwater River	Quartz Cr	1.0
NF Clearwater River	Quartz Cr	2.1
NF Clearwater River	Quartz Cr	0.0
NF Clearwater River	Quartz Cr	0.9
NF Clearwater River	Rutledge	0.0
NF Clearwater River	Rutledge	0.0
NF Clearwater River	Skull Cr	0.9
NF Clearwater River	Skull Cr	1.8
NF Clearwater River	Skull Cr	3.8
NF Clearwater River	Skull Cr	6.6
NF Clearwater River	Skull Cr	0.0
NF Clearwater River	Skull Cr	0.0
NF Clearwater River	Skull Cr	0.0
NF Clearwater River	Skull Cr	0.0
NF Clearwater River	Skull Cr	0.9
NF Clearwater River	Skull Cr	1.0
NF Clearwater River	Skull Cr	1.0
NF Clearwater River	Skull Cr	1.0
NF Clearwater River	Skull Cr	1.0
NF Clearwater River	Skull Cr	1.8
NF Clearwater River	Skull Cr	2.0
NF Clearwater River	Skull Cr	2.0
NF Clearwater River	Skull Cr	3.1
NF Clearwater River	Skull Cr	3.8
NF Clearwater River	Swamp	0.0
NF Clearwater River	Swamp	0.9
NF Clearwater River	Upper NFC	7.7
NF Clearwater River	Upper NFC	14.1
NF Clearwater River	Vanderbuilt Cr	5.9
NF Clearwater River	Vanderbuilt Cr	6.0
NF Clearwater River	Vanderbuilt Cr	6.1
NF Clearwater River	Vanderbuilt Cr	10.2
NF Clearwater River	Vanderbuilt Cr	10.2
NF Clearwater River	Vanderbuilt Cr	19.0
NF Clearwater River	Weitas Cr	0.0
NF Clearwater River	Weitas Cr	0.0
NF Clearwater River	Weitas Cr	2.1
NF Clearwater River	Weitas Cr	2.2
NF Payette River	Brush Cr	0.0
NF Payette River	Brush Cr	0.0
NF Payette River	Curtis Cr	0.0
NF Payette River	Duck Cr	0.0
NF Payette River	Duck Cr	0.0
NF Payette River	East Fork	0.0
NF Payette River	East Fork	0.0
NF Payette River	East Fork	0.0
NF Payette River	East Fork	0.0
NF Payette River	East Fork	0.0
NF Payette River	East Fork	0.0
NF Payette River	Hartsell	0.0
NF Payette River	Hartsell	0.0
NF Payette River	Mill Cr	0.0
NF Payette River	Powelson	0.0
NF Payette River	Powelson	0.0
NF Payette River	Powelson	0.0
NF Payette River	Rapid Cr	0.0
NF Payette River	Rapid Cr	0.0
NF Payette River	Rock Cr	0.0
NF Payette River	Rock Cr	0.0
NF Payette River	South Fork	0.0
NF Payette River	South Fork	0.0
NF Payette River	South Fork	0.0
NF Payette River	South Fork	0.0
NF Payette River	South Fork	0.0
NF Payette River	Twah Cr	0.0
NF Payette River	Twentymile Cr	0.0
NF Payette River	Twentymile Cr	0.0
NF Payette River	UNNAMED	0.0
NF Payette River	UNNAMED	0.0
NF Payette River	UNNAMED	0.0
NF Payette River	UNNAMED	0.0
NF Payette River	UNNAMED	0.0
NF Payette River	UNNAMED	0.0
NF Payette River	UNNAMED	0.0
NF Payette River	UNNAMED	0.0
NF Payette River	UNNAMED	0.0
NF Payette River	UNNAMED	0.0
North Fork Payette River	SF Gold Fork River	0.0
North Fork Payette River	North Fork Lake Fork	2.3
North Fork Payette River	North Fork Lake Fork	0.0
North Fork Payette River	North Fork Lake Fork	0.7
North Fork Payette River	Wilson Creek	0.0
North Fork Payette River	Jug Creek	0.0
North Fork Payette River	Cougar Creek	0.0
North Fork Payette River	Louie Creek	0.0
North Fork Payette River	Louie Creek	0.0
North Fork Payette River	Deep Creek	0.0
North Fork Payette River	Deep Creek	0.0
North Fork Payette River	Brush Creek	0.0
North Fork Payette River	Fisher Creek	0.0
North Fork Payette River	Willow Creek	0.0
North Fork Payette River	Boulder Creek	0.0
North Fork Payette River	Landing Creek	0.0
North Fork Payette River	French Creek	0.0
North Fork Payette River	Cloochman Creek	0.0
North Fork Payette River	Cloochman Creek	0.0
North Fork Payette River	Cloochman Creek	0.0
North Fork Payette River	East Fork Fisher Creek	0.0
North Fork Payette River	Copet Creek	0.0
North Fork Payette River	Unnamed to Rock Creek	0.0
North Fork Payette River	Unnamed to Flat Creek	0.0
North Fork Payette River	UNNAMED	0.0
North Fork Payette River	Hurd Creek	0.0
North Fork Payette River	Lake Creek	0.0
North Fork Payette River	Lake Creek	0.0
North Fork Payette River	Lake Creek	0.0
North Fork Payette River	Wagon Bay Creek	0.0
North Fork Payette River	Wagon Bay Creek	0.0
North Fork Payette River	Wagon Bay Creek	0.0
North Fork Payette River	No Business Canyon	0.0
North Fork Payette River	No Business Canyon	0.0
North Fork Payette River	NF Kennally Creek	0.0
North Fork Payette River	SF Gold Fork River	0.0
North Fork Payette River	Powelson Creek	0.0
North Fork Payette River	North Fork Lake Fork	0.0
North Fork Payette River	North Fork Lake Fork	0.0
North Fork Payette River	North Fork Lake Fork	2.3
North Fork Payette River	Camp Creek	0.0
North Fork Payette River	Camp Creek	0.0
North Fork Payette River	Paddy Creek	0.0
North Fork Payette River	Paddy Creek	0.0
North Fork Payette River	Rapid Creek	0.0
North Fork Payette River	Rapid Creek	0.0
North Fork Payette River	Sloans Creek	0.0
North Fork Payette River	Sloans Creek	0.0
North Fork Payette River	Flat Creek	0.0
North Fork Payette River	Trail Creek	0.0
North Fork Payette River	Trail Creek	0.0
North Fork Payette River	Pearl Creek	0.0
North Fork Payette River	Brush Creek	0.0
North Fork Payette River	Box Creek	0.0
North Fork Payette River	Fisher Creek	0.0
North Fork Payette River	Fisher Creek	0.0
North Fork Payette River	Fisher Creek	0.0
North Fork Payette River	Fisher Creek	0.0
North Fork Payette River	Fisher Creek	0.0
North Fork Payette River	Lemah Creek	0.0
North Fork Payette River	Twah Creek	0.0
North Fork Payette River	Twah Creek	0.0
North Fork Payette River	Boulder Creek	0.0
North Fork Payette River	Boulder Creek	0.0
North Fork Payette River	NF Payette River	0.0
North Fork Payette River	NF Payette River	0.0
North Fork Payette River	Kennally Creek	0.0
North Fork Payette River	Fall Creek	0.0
North Fork Payette River	Fall Creek	0.0
North Fork Payette River	Boulder Creek	0.0
Pahsimeroi River	Beagle Cr	2.2
Pahsimeroi River	Big Creek	8.0
Pahsimeroi River	Big Gulch	0.0
Pahsimeroi River	Big NFK	2.0
Pahsimeroi River	Big SFK	4.0
Pahsimeroi River	Big Timbe	0.0
Pahsimeroi River	Big Timbe	0.0
Pahsimeroi River	Burnt EFK	7.0
Pahsimeroi River	Ditch	5.0
Pahsimeroi River	East Fork	3.0
Pahsimeroi River	East Fork	9.8
Pahsimeroi River	East Fork	29.3
Pahsimeroi River	Falls	4.0
Pahsimeroi River	Falls	24.3
Pahsimeroi River	Falls	26.0
Pahsimeroi River	Falls	91.6
Pahsimeroi River	Falls	159.3
Pahsimeroi River	Falls Cr	17.9
Pahsimeroi River	Goldburg	2.0
Pahsimeroi River	Goldburg	2.0
Pahsimeroi River	Goldburg	8.0
Pahsimeroi River	Grouse Cr	0.0
Pahsimeroi River	Inyo	3.0
Pahsimeroi River	Mahogany	8.0
Pahsimeroi River	Mahogany	9.3
Pahsimeroi River	Mahogany	13.1
Pahsimeroi River	Middle Fork	0.0
Pahsimeroi River	Morse Cr	5.0
Pahsimeroi River	Morse Cr	44.5
Pahsimeroi River	North Fork	12.1
Pahsimeroi River	North Fork	42.9
Pahsimeroi River	North Fork	115.6
Pahsimeroi River	Pahsimeroi R	0.8
Pahsimeroi River	Pahsimeroi R	1.0
Pahsimeroi River	Pahsimeroi R	2.0
Pahsimeroi River	Pahsimeroi R	3.0
Pahsimeroi River	Pahsimeroi R	10.0
Pahsimeroi River	Pahsimeroi R	11.0
Pahsimeroi River	Pahsimeroi R	20.0
Pahsimeroi River	Pahsimeroi R	0.0
Pahsimeroi River	Pahsimeroi R	0.0
Pahsimeroi River	Pahsimeroi R	0.0

Appendix D. Continued.

Core area	Stream	BUT/100m
Pahsimeroi River	Pahsimeroi R	0.0
Pahsimeroi River	Patterson Cr	1.0
Pahsimeroi River	Patterson Cr	6.0
Pahsimeroi River	Patterson Cr	9.0
Pahsimeroi River	Patterson Cr	61.6
Pahsimeroi River	Patterson Cr	90.7
Pahsimeroi River	SF Pahsimeroi	2.0
Pahsimeroi River	SF Pahsimeroi	7.9
Pahsimeroi River	SF Pahsimeroi	8.2
Pahsimeroi River	SF Pahsimeroi	12.3
Pahsimeroi River	UNNAMED	18.1
Pahsimeroi River	UNNAMED	18.2
Pahsimeroi River	WF Pahsimeroi	12.1
Priest Lake	NF Pahsimeroi	0.0
Priest Lake	NF Pahsimeroi	2.0
Selway River	Bear Creek	0.0
Selway River	Bear Creek	0.0
Selway River	Deep Creek	0.0
Selway River	Deep Creek	0.0
Selway River	Deep Creek	5.5
Selway River	EF Moose Creek	0.0
Selway River	Gedney Creek	0.0
Selway River	Gedney Creek	0.0
Selway River	Little Clearwater R	0.0
Selway River	Little Clearwater R	2.5
Selway River	Marten Creek	0.0
Selway River	Meadow Creek	0.0
Selway River	Meadow Creek	0.0
Selway River	Moose Creek	0.0
Selway River	Moose Creek	0.0
Selway River	NF Moose Creek	1.0
Selway River	OHara Creek	0.0
Selway River	OHara Creek	0.0
Selway River	Running Creek	0.0
Selway River	Running Creek	0.0
Selway River	Selway River	0.0
Selway River	Selway River	0.0
Selway River	Selway River	0.0
Selway River	Selway River	0.0
Selway River	Selway River	0.0
Selway River	Selway River	2.3
Selway River	Selway River	4.7
Selway River	Selway River	6.6
Selway River	Three Links Creek	0.0
Selway River	Three Links Creek	0.0
Selway River	White Cap Creek	0.0
Selway River	White Cap Creek	0.0
Selway River	White Cap Creek	0.0
Selway River	White Cap Creek	0.0
Selway River	White Cap Creek	0.0
Selway River	White Cap Creek	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	0.0
SF Clearwater River	American River	4.0
SF Clearwater River	Baldy Creek	0.0
SF Clearwater River	Baldy Creek	0.0
SF Clearwater River	Baldy Creek	0.0
SF Clearwater River	Baldy Creek	1.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.0
SF Clearwater River	Crooked River	0.8
SF Clearwater River	Crooked River	1.0
SF Clearwater River	Crooked River	1.4
SF Clearwater River	Crooked River	1.4
SF Clearwater River	Crooked River	1.7
SF Clearwater River	Crooked River	1.8
SF Clearwater River	East Fork	0.0
SF Clearwater River	East Fork	8.5
SF Clearwater River	EF Crooked River	0.0
SF Clearwater River	EF Crooked River	1.9
SF Clearwater River	EF Relief Creek	0.0
SF Clearwater River	Fivemile Creek	0.0
SF Clearwater River	Fivemile Creek	0.0
SF Clearwater River	Fivemile Creek	0.0
SF Clearwater River	Hays Cr	0.0
SF Clearwater River	Hays Fork	0.0
SF Clearwater River	Johns Creek	0.0
SF Clearwater River	Johns Creek	0.0
SF Clearwater River	Johns Creek	0.0
SF Clearwater River	Johns Creek	0.0
SF Clearwater River	Lick Creek	0.0
SF Clearwater River	Little Mo	0.0
SF Clearwater River	Little Mo	0.0
SF Clearwater River	Little Mo	0.0
SF Clearwater River	Little Mo	0.0
SF Clearwater River	Little Mo	0.0
SF Clearwater River	Little Mo	0.0
SF Clearwater River	Little Mo	0.0
SF Clearwater River	Little Mo	0.0
SF Clearwater River	Little Mo	1.9
SF Clearwater River	MF Red River	0.0
SF Clearwater River	MF Red River	0.0
SF Clearwater River	Moores Creek	0.0
SF Clearwater River	Moores Creek	4.3
SF Clearwater River	Moose Butte Cr	0.0
SF Clearwater River	Mule Creek	0.0
SF Clearwater River	Newsome Creek	0.0
SF Clearwater River	Newsome Creek	0.0
SF Clearwater River	Newsome Creek	0.0
SF Clearwater River	Newsome Creek	0.0
SF Clearwater River	Newsome Creek	0.0
SF Clearwater River	Newsome Creek	0.0
SF Clearwater River	Newsome Creek	0.0
SF Clearwater River	Newsome Creek	0.0
SF Clearwater River	Newsome Creek	0.0
SF Clearwater River	Newsome Creek	0.0
SF Clearwater River	Newsome Creek	2.0
SF Clearwater River	Newsome Creek	3.1
SF Clearwater River	Newsome Creek	3.6
SF Clearwater River	North Fork	0.0
SF Clearwater River	North Fork	0.0
SF Clearwater River	Pilot Creek	0.0
SF Clearwater River	Pilot Creek	0.0
SF Clearwater River	Pilot Creek	1.9
SF Clearwater River	Pilot Creek	2.0
SF Clearwater River	Pilot Creek	4.0
SF Clearwater River	Red Horse	0.0
SF Clearwater River	Red Horse Creek	0.0
SF Clearwater River	Red Horse Creek	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
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SF Clearwater River	Red River	0.0
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SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.0
SF Clearwater River	Red River	0.9
SF Clearwater River	Red River	1.6
SF Clearwater River	Red River	4.0
SF Clearwater River	Red River	5.9
SF Clearwater River	Relief Creek	0.0
SF Clearwater River	Relief Creek	0.0
SF Clearwater River	Relief Creek	0.0
SF Clearwater River	Relief Creek	0.0
SF Clearwater River	Relief Creek	0.0
SF Clearwater River	Relief Creek	1.2
SF Clearwater River	Schooner	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.5
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
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SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
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SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0

Appendix D. Continued.

Core area	Stream	BUT/100m
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
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SF Clearwater River	SF Clearwater R	0.0
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SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.0
SF Clearwater River	SF Clearwater R	0.7
SF Clearwater River	SF Clearwater R	0.8
SF Clearwater River	SF Clearwater R	1.3
SF Clearwater River	SF Clearwater R	1.4
SF Clearwater River	SF Clearwater R	1.4
SF Clearwater River	SF Clearwater R	1.8
SF Clearwater River	SF Clearwater R	1.8
SF Clearwater River	SF Clearwater R	2.0
SF Clearwater River	SF Clearwater R	2.1
SF Clearwater River	SF Clearwater R	2.1
SF Clearwater River	SF Clearwater R	2.9
SF Clearwater River	Tenmile Creek	0.0
SF Clearwater River	Tenmile Creek	5.5
SF Clearwater River	Tributary	0.0
SF Clearwater River	Umatilla	0.0
SF Clearwater River	West Fork	0.0
SF Clearwater River	WF Crooked River	0.0
SF Clearwater River	WF Crooked River	0.0
SF Clearwater River	West Fork Red R	0.0
SF Salmon River	UNNAMED	0.0
SF Salmon River	UNNAMED	0.0
SF Salmon River	UNNAMED	4.9
SF Salmon River	Bear Cr	0.0
SF Salmon River	Bear Cr	0.0
SF Salmon River	Buck Cr	0.0
SF Salmon River	Buck Cr	0.0
SF Salmon River	Buck Cr	5.2
SF Salmon River	Burntlog Creek	0.0
SF Salmon River	Burntlog Creek	0.0
SF Salmon River	Dollar Creek	0.0
SF Salmon River	EF SF Salmon R	0.0
SF Salmon River	EF SF Salmon R	0.0
SF Salmon River	EF SF Salmon R	0.8
SF Salmon River	EF SF Salmon R	2.1
SF Salmon River	EF SF Salmon R	4.8
SF Salmon River	EF SF Salmon R	5.8
SF Salmon River	EF SF Salmon R	8.8
SF Salmon River	EF SF Salmon R	18.0
SF Salmon River	Hanson Cr	0.0
SF Salmon River	Hanson Cr	0.0
SF Salmon River	Johnson Creek	0.0
SF Salmon River	Johnson Creek	0.0
SF Salmon River	Johnson Creek	0.0
SF Salmon River	Johnson Creek	0.0
SF Salmon River	Johnson Creek	0.0
SF Salmon River	Johnson Creek	0.0
SF Salmon River	Johnson Creek	0.0
SF Salmon River	Johnson Creek	0.0
SF Salmon River	Johnson Creek	0.8
SF Salmon River	Johnson Creek	0.9
SF Salmon River	Johnson Creek	1.4
SF Salmon River	Lake Creek	0.0
SF Salmon River	Lake Creek	1.0
SF Salmon River	Lick Creek	0.0
SF Salmon River	Lick Creek	0.0
SF Salmon River	Meadow Creek	0.0
SF Salmon River	Meadow Creek	0.0
SF Salmon River	Meadow Creek	0.0
SF Salmon River	Meadow Creek	1.1
SF Salmon River	Moose Creek	0.0
SF Salmon River	North Fork	0.0
SF Salmon River	North Fork	0.0
SF Salmon River	North Fork	1.0
SF Salmon River	Porcupine Cr	0.0
SF Salmon River	Riordan Cr	3.9
SF Salmon River	Rock Creek	0.0
SF Salmon River	Sand Creek	0.0
SF Salmon River	Secesh River	0.0
SF Salmon River	Secesh River	0.0
SF Salmon River	Secesh River	0.0
SF Salmon River	Secesh River	0.0
SF Salmon River	Secesh River	0.0
SF Salmon River	Secesh River	0.6
SF Salmon River	Six-Bit Cr	0.0
SF Salmon River	Six-Bit Cr	0.0
SF Salmon River	Six-Bit Cr	0.0
SF Salmon River	Six-Bit Cr	0.0
SF Salmon River	Six-Bit Cr	0.0
SF Salmon River	Six-Bit Cr	2.2
SF Salmon River	Six-Bit Cr	2.2
SF Salmon River	Six-Bit Cr	3.7
SF Salmon River	Six-Bit Cr	7.5
SF Salmon River	Six-Bit Cr	10.7
SF Salmon River	SF Salmon River	0.0
SF Salmon River	SF Salmon River	0.0
SF Salmon River	SF Salmon River	0.0
SF Salmon River	SF Salmon River	0.0
SF Salmon River	SF Salmon River	0.0
SF Salmon River	SF Salmon River	0.0
SF Salmon River	SF Salmon River	1.8
SF Salmon River	SF Salmon River	2.1
SF Salmon River	SF Salmon River	2.8
SF Salmon River	SF Salmon River	2.9
SF Salmon River	Trapper Cr	5.3
SF Salmon River	Wardenhof	0.0
SF Salmon River	Wardenhof	4.3
Sheep Creek	Sheep Creek	0.0
Sheep Creek	Sheep Creek	1.3
Squaw Creek	Pine Cree	0.0
Squaw Creek	Pine Cr	0.0
Squaw Creek	Pine Cr	0.0
Squaw Creek	Poison Cr	0.0
Squaw Creek	Poison Cr	1.1
Squaw Creek	Pole Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	0.0
Squaw Creek	Squaw Cr	1.1
Squaw Creek	Squaw Cr	1.8
Squaw Creek	Squaw Cr	4.0
Squaw Creek	Third Fork Squaw	0.0
Squaw Creek	Third Fork Squaw	0.0
Squaw Creek	Third Fork Squaw	0.0
Squaw Creek	Third Fork Squaw	0.0
Squaw Creek	Third Fork Squaw	1.0
Squaw Creek	Third Fork Squaw	2.1
Squaw Creek	Third Fork Squaw	5.3
Squaw Creek	Third Fork Squaw	8.1
Squaw Creek	UNNAMED	0.0
Squaw Creek	UNNAMED	0.0
Squaw Creek	UNNAMED	0.0
Squaw Creek	UNNAMED	0.0
Squaw Creek	UNNAMED	37.7
Squaw Creek	Third Fork Squaw Creek	0.0
Squaw Creek	Squaw Creek	0.0
Squaw Creek	Squaw Creek	0.0
Squaw Creek	Squaw Creek	0.0
Squaw Creek	Third Fork Squaw Creek	0.0
Squaw Creek	Squaw Creek	0.0
Squaw Creek	Squaw Creek	0.0
Squaw Creek	Squaw Creek	0.0
Squaw Creek	Poison Creek	0.0
Squaw Creek	Trib to Sage Hen Reservo	0.0
Squaw Creek	Unnamed to 3rd fk Squaw	0.0
Squaw Creek	UNNAMED	6.3
Squaw Creek	Renwick Creek	0.0
Squaw Creek	Renwick Creek	0.9
Squaw Creek	Sage Hen Creek	0.0
Squaw Creek	Little Squaw Creek	0.0
Squaw Creek	Second Fork Squaw Cr	0.0
Squaw Creek	Second Fork Squaw Cr	0.0
Squaw Creek	Squaw Creek	0.0
Squaw Creek	Squaw Creek	0.0
Squaw Creek	Squaw Creek	0.0
Squaw Creek	Squaw Creek	0.0
Upper Salmon River	Alturas Lake Cr	0.0
Upper Salmon River	Basin Cr	0.8
Upper Salmon River	Basin Cr	5.0
Upper Salmon River	Basin Cr	0.0
Upper Salmon River	Basin Cr	0.0
Upper Salmon River	Beaver Cr	0.0
Upper Salmon River	Beaver Cr	0.0
Upper Salmon River	Beaver Cr	0.0
Upper Salmon River	Beaver Cr	0.0
Upper Salmon River	Beaver Cr	0.0
Upper Salmon River	Beaver Cr	0.0

Appendix D. Continued.

Core area	Stream	BUT/100m
Upper Salmon River	Beaver Cr	0.0
Upper Salmon River	Beaver Cr	0.0
Upper Salmon River	Big Timber Cr	1.0
Upper Salmon River	Big Timber Cr	4.0
Upper Salmon River	Big Timber Cr	5.0
Upper Salmon River	Birdseye	1.1
Upper Salmon River	Bruno Cr	0.0
Upper Salmon River	Cabin Cr	1.0
Upper Salmon River	Cash Cr	0.0
Upper Salmon River	Challis Cr	2.0
Upper Salmon River	Challis Cr	14.6
Upper Salmon River	Challis Cr	0.0
Upper Salmon River	Challis Cr	0.0
Upper Salmon River	Challis Cr	0.9
Upper Salmon River	Challis Cr	5.6
Upper Salmon River	Challis Cr	9.7
Upper Salmon River	Challis Cr	12.8
Upper Salmon River	Cinnabar	0.0
Upper Salmon River	Corral Cr	0.0
Upper Salmon River	East Basin Cr	0.0
Upper Salmon River	East Basin Cr	1.7
Upper Salmon River	East Basin Cr	3.0
Upper Salmon River	EF Salmon River	0.0
Upper Salmon River	EF Salmon River	0.0
Upper Salmon River	EF Salmon River	0.0
Upper Salmon River	EF Salmon River	0.0
Upper Salmon River	Eddy Creek	0.0
Upper Salmon River	Eddy Creek	0.0
Upper Salmon River	Eightmile	6.0
Upper Salmon River	Elevenmile	6.0
Upper Salmon River	Elk Creek	0.0
Upper Salmon River	Fivemile Cr	1.0
Upper Salmon River	Garden Cr	3.0
Upper Salmon River	Garden Cr	5.8
Upper Salmon River	Garden Cr	66.2
Upper Salmon River	Jordan Cr	1.6
Upper Salmon River	Jordan Cr	2.0
Upper Salmon River	Jordan Cr	3.7
Upper Salmon River	Jordan Cr	6.5
Upper Salmon River	Jordan Cr	0.0
Upper Salmon River	Jordan Cr	0.0
Upper Salmon River	Kinnikinic Cr	0.0
Upper Salmon River	Kinnikinic Cr	3.5
Upper Salmon River	Lake Creek	0.0
Upper Salmon River	Lick Cr	2.0
Upper Salmon River	Lick Cr	18.0
Upper Salmon River	Little Cabin Cr	0.0
Upper Salmon River	Lodgepole	8.0
Upper Salmon River	Martin Cr	4.3
Upper Salmon River	Martin Cr	1.0
Upper Salmon River	McKay Cr	2.0
Upper Salmon River	McKay Cr	10.0
Upper Salmon River	Mill Cr	7.0
Upper Salmon River	Mill Cr	0.0
Upper Salmon River	Mill Cr	0.0
Upper Salmon River	Mill Cr	1.2
Upper Salmon River	Mill Cr	8.0
Upper Salmon River	Mill Cr	33.3
Upper Salmon River	Mill Cr	40.9
Upper Salmon River	Mill Cr	51.0
Upper Salmon River	Morgan Cr	0.6
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.5
Upper Salmon River	Morgan Cr	1.2
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	Morgan Cr	0.0
Upper Salmon River	WF Morgan	1.0
Upper Salmon River	WF Morgan	2.0
Upper Salmon River	WF Morgan	2.0
Upper Salmon River	Ninemile	2.0
Upper Salmon River	Redfish Lake Cr	0.0
Upper Salmon River	Redfish Lake Cr	0.0
Upper Salmon River	Salmon River	0.0
Upper Salmon River	Salmon River	0.0
Upper Salmon River	Salmon River	0.0
Upper Salmon River	Salmon River	0.0
Upper Salmon River	Salmon River	0.0
Upper Salmon River	Salmon River	0.0
Upper Salmon River	Salmon River	0.6
Upper Salmon River	Salmon River	0.6
Upper Salmon River	Salmon River	0.7
Upper Salmon River	Salmon River	0.7
Upper Salmon River	Salmon River	0.7
Upper Salmon River	Slate Cr	0.0
Upper Salmon River	Slate Cr	1.0
Upper Salmon River	Smiley Cr	0.0
Upper Salmon River	Squaw Cr	0.0
Upper Salmon River	Squaw Cr	0.0
Upper Salmon River	Squaw Cr	0.0
Upper Salmon River	Squaw Cr	0.0
Upper Salmon River	Squaw Cr	0.0
Upper Salmon River	Squaw Cr	0.0
Upper Salmon River	Squaw Cr	0.0
Upper Salmon River	Squaw Cr	0.0
Upper Salmon River	Squaw Cr	1.0
Upper Salmon River	Squaw Cr	1.0
Upper Salmon River	Sunday Cr	7.0
Upper Salmon River	Tenmile Cr	9.0
Upper Salmon River	Thompson Cr	0.0
Upper Salmon River	Thompson Cr	3.8
Upper Salmon River	Trail Cr	0.0
Upper Salmon River	Twelvemile Cr	1.0
Upper Salmon River	Twin Cr	1.8
Upper Salmon River	Valley Cr	0.8
Upper Salmon River	Valley Cr	0.8
Upper Salmon River	Valley Cr	0.0
Upper Salmon River	Valley Cr	0.0
Upper Salmon River	Valley Cr	0.0
Upper Salmon River	Valley Cr	2.3
Upper Salmon River	EF Valley	1.0
Upper Salmon River	Van Horn	0.0
Upper Salmon River	Van Horn	1.0
Upper Salmon River	Van Horn	4.0
Upper Salmon River	Van Horn	4.5
Upper Salmon River	Van Horn	5.0
Upper Salmon River	Van Horn	10.0
Upper Salmon River	Warm Springs Cr	7.5
Upper Salmon River	Warm Springs Cr	10.4
Upper Salmon River	West Fork	0.0
Upper Salmon River	West Fork	0.0
Upper Salmon River	West Fork	0.0
Upper Salmon River	West Fork	0.0
Upper Salmon River	West Fork	0.0
Upper Salmon River	West Fork	2.9
Upper Salmon River	West Fork	18.6
Upper Salmon River	WF Yankee Fork	2.3
Upper Salmon River	West Pass	7.0
Upper Salmon River	White Goat	0.0
Upper Salmon River	Woodtick	9.4
Upper Salmon River	Yankee Fork	2.0
Upper Salmon River	Yankee Fork	4.0
Upper Salmon River	Yellowjacket	0.0
Upper Salmon River	Yellowjacket	1.8
Upper Salmon River	Yellowjacket	6.3
Upper SF Payette River	Archie Cr	0.0
Upper SF Payette River	Archie Cr	0.0
Upper SF Payette River	Baron Cr	7.9
Upper SF Payette River	Big Spruce	0.0
Upper SF Payette River	Big Spruce	0.0
Upper SF Payette River	Camp Cr	0.0
Upper SF Payette River	Canyon Cr	0.0
Upper SF Payette River	Canyon Cr	0.0
Upper SF Payette River	Canyon Cr	5.0
Upper SF Payette River	Canyon Cr	19.1
Upper SF Payette River	Canyon Cr	27.0
Upper SF Payette River	Casner Cr	0.0
Upper SF Payette River	Casner Cr	0.0
Upper SF Payette River	Castro Cr	0.0
Upper SF Payette River	Cat Cr	0.0
Upper SF Payette River	Chapman Cr	0.0
Upper SF Payette River	Chapman Cr	0.0
Upper SF Payette River	Chapman Cr	13.4
Upper SF Payette River	Clear Cr	0.0
Upper SF Payette River	Clear Cr	0.0
Upper SF Payette River	Clear Cr	0.0
Upper SF Payette River	Clear Cr	0.8
Upper SF Payette River	Clear Cr	1.0
Upper SF Payette River	Clear Cr	1.1
Upper SF Payette River	Clear Cr	2.9
Upper SF Payette River	Clear Cr	4.0
Upper SF Payette River	Clear Cr	7.8
Upper SF Payette River	Danskin Cr	0.0
Upper SF Payette River	Danskin Cr	0.0
Upper SF Payette River	Danskin Cr	0.0
Upper SF Payette River	East Fork	0.0
Upper SF Payette River	East Fork	0.0
Upper SF Payette River	East Fork	23.7
Upper SF Payette River	Eightmile	0.0
Upper SF Payette River	Eightmile	8.4
Upper SF Payette River	Fence Cr	0.0
Upper SF Payette River	Fence Cr	0.0
Upper SF Payette River	Fivemile	0.0
Upper SF Payette River	Fivemile	0.0
Upper SF Payette River	Fox Creek	0.0
Upper SF Payette River	Fox Creek	0.0
Upper SF Payette River	Fox Creek	0.0
Upper SF Payette River	Gates Cr	0.0
Upper SF Payette River	Gates Cr	1.9
Upper SF Payette River	Jackson Cr	0.0
Upper SF Payette River	Jackson Cr	0.0
Upper SF Payette River	Jackson Cr	0.0
Upper SF Payette River	Kettle Cr	0.0
Upper SF Payette River	Kettle Cr	0.0
Upper SF Payette River	Kettle Cr	7.0
Upper SF Payette River	Kirkham Cr	0.0
Upper SF Payette River	Kirkham Cr	0.0
Upper SF Payette River	Kirkham Cr	0.0
Upper SF Payette River	Left Fork	0.0
Upper SF Payette River	Lick Cr	0.0
Upper SF Payette River	Long Cr	0.0
Upper SF Payette River	Long Cr	0.0
Upper SF Payette River	Long Cr	0.0
Upper SF Payette River	Lorenzo Cr	0.0
Upper SF Payette River	MacDonald	0.0
Upper SF Payette River	MacDonald	0.0
Upper SF Payette River	Middle Fork	0.0
Upper SF Payette River	Middle Fork	0.0
Upper SF Payette River	Middle Fork	0.0
Upper SF Payette River	Middle Fork	0.0
Upper SF Payette River	Middle Fork	23.1
Upper SF Payette River	Miller Cr	0.0
Upper SF Payette River	Miller Cr	0.0
Upper SF Payette River	Nellies B	0.0
Upper SF Payette River	Nellies B	0.0
Upper SF Payette River	No Man Cr	0.0
Upper SF Payette River	No Man Cr	0.0
Upper SF Payette River	North Fork	0.0
Upper SF Payette River	North Fork	5.0
Upper SF Payette River	North Fork	18.0
Upper SF Payette River	North Fork	36.8
Upper SF Payette River	OKeefe Cr	0.0
Upper SF Payette River	Packsaddle Cr	4.0
Upper SF Payette River	Packsaddle Cr	9.1
Upper SF Payette River	Park Cr	0.0
Upper SF Payette River	Park Cr	0.0
Upper SF Payette River	Richards	0.0
Upper SF Payette River	Richards	0.0
Upper SF Payette River	Richards	0.0
Upper SF Payette River	Rough Cr	0.0
Upper SF Payette River	Rough Cr	0.0
Upper SF Payette River	Scott Cr	0.0

Appendix D. Continued.

Core area	Stream	BUT/100m
Upper SF Payette River	Scott Cr	0.0
Upper SF Payette River	Scott Cr	0.8
Upper SF Payette River	Scott Cr	4.0
Upper SF Payette River	Scott Cr	4.9
Upper SF Payette River	Scott Cr	17.6
Upper SF Payette River	Sixmile Cr	0.0
Upper SF Payette River	Smith Cr	28.0
Upper SF Payette River	Smokey Cr	0.0
Upper SF Payette River	Smokey Cr	0.0
Upper SF Payette River	South Fork	0.0
Upper SF Payette River	South Fork	0.0
Upper SF Payette River	South Fork	0.0
Upper SF Payette River	South Fork	0.0
Upper SF Payette River	South Fork	0.0
Upper SF Payette River	South Fork	0.0
Upper SF Payette River	South Fork	0.0
Upper SF Payette River	South Fork	1.9
Upper SF Payette River	South Fork	1.9
Upper SF Payette River	Tenmile Cr	0.0
Upper SF Payette River	Tenmile Cr	6.0
Upper SF Payette River	Tenmile Cr	6.9
Upper SF Payette River	Tenmile Cr	16.7
Upper SF Payette River	Trail Cr	6.8
Upper SF Payette River	UNNAMED	0.0
Upper SF Payette River	UNNAMED	0.0
Upper SF Payette River	UNNAMED	0.0
Upper SF Payette River	UNNAMED	0.0
Upper SF Payette River	UNNAMED	0.0
Upper SF Payette River	UNNAMED	0.0
Upper SF Payette River	UNNAMED	0.0
Upper SF Payette River	UNNAMED	0.0
Upper SF Payette River	UNNAMED	0.0
Upper SF Payette River	UNNAMED	2.1
Upper SF Payette River	UNNAMED	9.2
Upper SF Payette River	UNNAMED	16.3
Upper SF Payette River	Warm Springs Cr	0.0
Upper SF Payette River	Warm Springs Cr	0.0
Upper SF Payette River	Warm Springs Cr	6.3
Upper SF Payette River	Whitehawk	0.0
Upper SF Payette River	Whitehawk	0.0
Upper SF Payette River	Whitehawk	0.0
Upper SF Payette River	Wills Gulch	0.0
Upper SF Payette River	Wilson Cr	0.0
Upper SF Payette River	Wilson Cr	0.0
Upper SF Payette River	Wolf Cr	0.0
Upper SF Payette River	Wolf Cr	0.0
Upper SF Payette River	South Fork Clear Creek	2.4
Upper SF Payette River	Canyon Creek	2.0
Upper SF Payette River	Canyon Creek	11.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	South Fork Payette River	0.0
Upper SF Payette River	Kettle Creek	0.0
Upper SF Payette River	East Fork Big Pine Creek	0.0
Upper SF Payette River	Silver Creek	0.0
Upper SF Payette River	Archie Creek	0.0
Upper SF Payette River	Kirkham Creek	0.0
Upper SF Payette River	Rock Creek	0.0
Upper SF Payette River	Danskin Creek	0.0
Upper SF Payette River	Left Fork Danskin Creek	0.0
Upper SF Payette River	North Fork Baron Creek	0.0
Upper SF Payette River	Warm Springs Creek	0.0
Upper SF Payette River	South Fork Payette River	0.0
Weiser River	Anderson Cr	4.3
Weiser River	Anderson Cr	9.7
Weiser River	Beaver Cr	0.0
Weiser River	Beaver Cr	0.0
Weiser River	Beaver Cr	0.0
Weiser River	Cottonwood	0.0
Weiser River	Cottonwood	0.0
Weiser River	Cottonwood	0.0
Weiser River	East Fork	0.0
Weiser River	East Fork	0.0
Weiser River	East Fork	0.0
Weiser River	Grizzly Cr	0.0
Weiser River	Johnson Cr	0.0
Weiser River	Johnson Cr	0.0
Weiser River	Johnson Cr	0.0
Weiser River	King Hill	0.0
Weiser River	King Hill	0.0
Weiser River	King Hill	0.0
Weiser River	West Fork	0.0
Weiser River	West Fork	0.0
Weiser River	West Fork	0.0
Weiser River	East Fork Weiser River	3.0
Weiser River	East Fork Weiser River	0.0
Weiser River	Hornet Creek	0.0
Weiser River	Big Creek	0.0
Weiser River	Fall Creek	0.0
Weiser River	North Fork Grays Creek	0.0
Weiser River	West Branch Weiser R	0.0
Weiser River	West Branch Weiser R	0.0
Weiser River	East Fork Lost Creek	0.0
Weiser River	Grays Creek	0.0
Weiser River	Grays Creek	0.0
Weiser River	Lost Creek	0.0
Weiser River	Grouse Creek	0.0
Weiser River	Joker Creek	0.0
Weiser River	Mica Creek	0.0
Weiser River	Beaver Creek	0.0
Weiser River	Cottonwood Creek	0.0
Weiser River	East Fork Lost Creek	0.0
Weiser River	MF Weiser River	0.0
Weiser River	Lost Creek	0.0
Weiser River	North Hornet Creek	0.0
Weiser River	North Fork Hornet Creek	0.0
Weiser River	UNNAMED	0.0
Weiser River	Low E Branch Weiser R	0.0
Weiser River	East Branch Weiser River	0.0
Weiser River	East Fork Weiser River	0.0
Weiser River	West Fork Weiser River	0.0
Weiser River	West Fork Weiser River	0.0
Weiser River	MF Weiser River	0.0
Weiser River	Weiser River	0.0
Weiser River	UNNAMED	0.0
Weiser River	Weiser River	0.0

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